PETROLEUM WEEK

AUGUST 19, 1955

■ A McGRAW-HILL PUBLICATION

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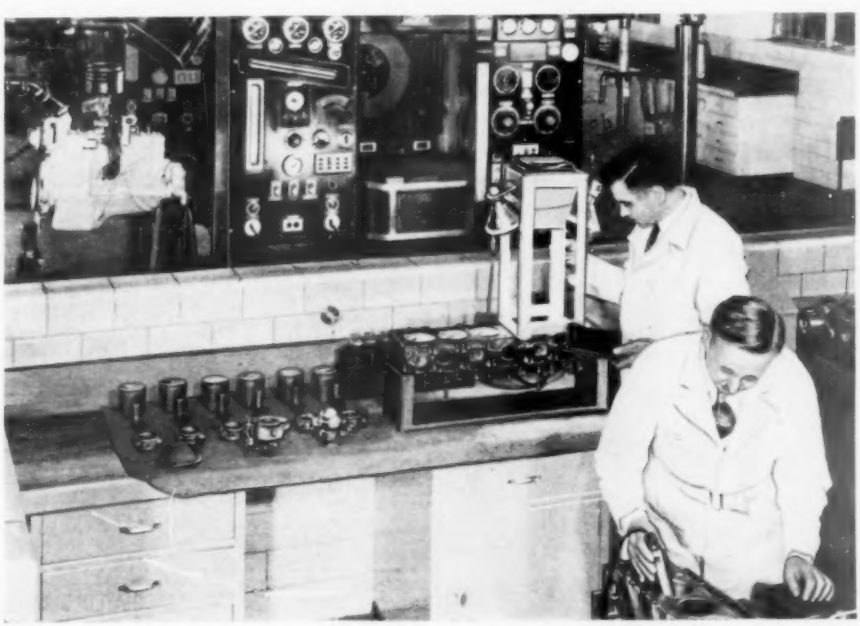

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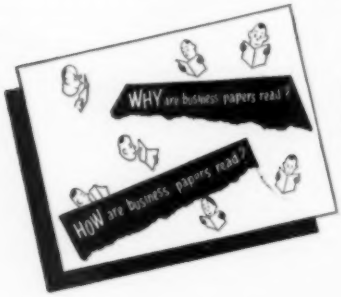

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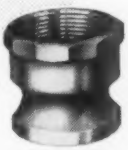

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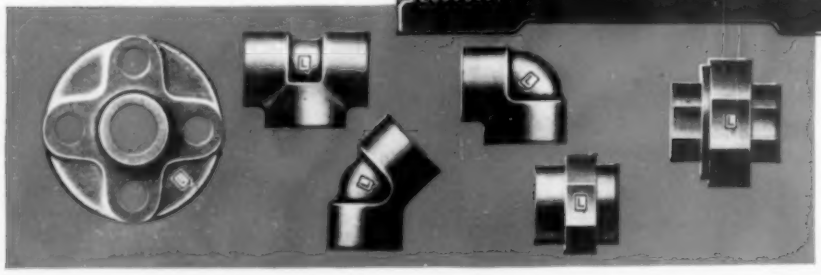

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August 19, 1955

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Major changes in 1956 model cars are on the way. Higher compression ratios will mean heavier demand for premium gasoline. . . . p. 9

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CIO's Oil, Chemical, & Atomic Workers Union is casting eyes on unorganized professional and technical employees. The union has set up a special committee to study possibilities of bringing these workers into the organization.

•

Inflation talk is growing; if it were to come, the pressure on costs would force oil prices up. But chances are that there will be no general rise. . . . p. 17

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Steel for the oil industry is running short of demand. Buyers are being put on quotas, with delivery schedules running well into November. . . . p. 11

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"Oil-eating bugs" may hold the key to new developments in petroleum technology. One plan is to use the microorganisms to remove all traces of oil from refinery wastes. . . . p. 22

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At least 60,000 tank cars would be needed to haul cargo diverted from tankers in the event of war. But if more pipelines are built, a government advisory group reports, the need for tank cars would shrink. . . . p. 29

•

Asphalt is moving out of the stepchild class in the oil industry. Postwar demand has expanded significantly, future prospects look even brighter. Biggest market potential: 2.5-million miles of unpaved roads. . . . p. 26

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Accurate long-range weather forecasts, long desired by oil men, may be in the offing. One leading scientist believes we may be able to influence or even partly control the weather some day. . . . p. 10

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The first contract for foreign participation in Argentina's oil development is at the showdown stage. The Argentine government wants it approved by Congress before late September, but there is considerable opposition. . . . p. 23

•

Magnetic recording of seismic data on tape or discs is catching on fast. Operators who are trying it say a single shot will give more subsurface information than a lot of shots with conventional methods of recording. . . . p. 14

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau

August 19, 1955

The Justice Dept. is pondering how to police Oil Compact activities. By law, it must now make annual reports to Congress on whether state oil conservation practices result in price fixing or monopolistic practices. But the agency doesn't know whether it should undertake a full-scale scrutiny—such as having staffers attend every meeting of state regulatory bodies—or simply make periodic spot checks.

A special antitrust section probably will be set up. It would not only handle oil compact work, but would make other special reports already required by Congress: synthetic rubber, the Defense Production Act, and industry advisory committees.

•

A new alkylate expansion goal may be announced soon. The Interior Dept.'s recommendation for a further capacity increase of 25,000 b/d was stymied while the Office of Defense Mobilization was deciding what to do about fast tax writeoffs in general. Now that ODM has put a "freeze" on most projects (page 13) a new alkylate goal is likely to be approved. The old expansion goal of 30,000 b/d increase in capacity has been virtually filled.

•

The outlook for natural gas legislation has some senators worried. Proponents of the bill to free independent producers of federal control fear the industry may have become overconfident. Some senators say privately that the outcome is still very much in doubt. Any let-down on the part of the industry could be fatal.

•

Watch for more antidiscrimination developments. The Nixon committee is gently prodding the AFL, including its Teamsters Union, pointing out that it has not kept pace with the CIO in trying to meet the problem. The committee cited the pattern established by the CIO oil union and Shell Oil Co. to abolish double-standard promotions at Shell's Deer Park (Tex.) plants (PW—Aug.12'55,p12).

•

ODM may delay a decision on a West Coast pipeline, pending completion of a study being made of West Coast oil requirements and supply by a House armed forces subcommittee. Meanwhile, odds are still high that no special government aid will be granted for the long-standing proposal by L. M. Glasco to build the line from Texas to California.

•

War emergency planning for oil will be stepped up. The program had been stymied by the fact that local civilian defense officials, rather than oil experts, would take charge, issue orders, in an emergency.

The Interior Dept. will call the shots for oil now, as a result of a presidential directive delegating it the authority on fuels matters. It's likely that Interior's Office of Oil & Gas will give the National Petroleum Council one or more assignments at its next meeting to assist further in drawing specific emergency blueprints. One likely development: Regional oil groups, with power to act should bombs fall, may be set up.

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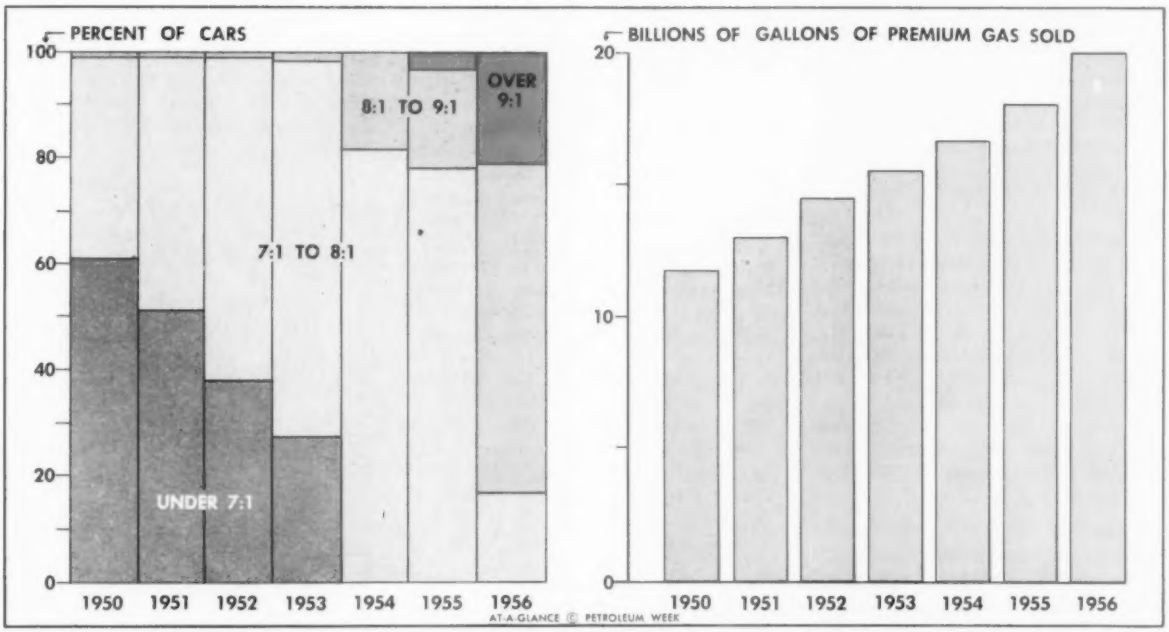

HIGHER COMPRESSION RATIOS in more cars mean . . . MORE PREMIUM GASOLINE will be sold, for there are . . .

Major Changes Coming on '56 Cars

Major changes are coming in 1956 model cars—changes that will have quick impact on some segments of the oil industry, long-range effect on all.

There will be the usual changes in styling, with the trend toward longer, sleeker bodies. These will influence consumer buying. But the real changes in which oil men are interested are those found under the hood.

To get the accurate facts on the new models and the changes that are of concern to the oil industry, PETROLEUM WEEK surveyed all auto manufacturers last week. Here's what we found:

Engine compression ratios will climb to new highs—boosting engine power by about 25 hp. per car.

More than 21% of all 1956-model cars produced will have engines of 9:1 compression ratio or higher. That compares with only 3.4% in 1955, and none before that. This year's peak ratio was barely 9:1; next year it will move to 9.75:1—and may go up at the last minute to 10:1.

Compression ratios of more than 62% of the 1956 cars will be between 8:1 and 9:1. Last year only 18.5% fell in that bracket.

On a weighted average basis, compression ratios for the 1956 cars will be 8.42:1, compared with 7.93:1 this year. In 1950 the average was just a shade over 7:1.

About 40% of all 1956 cars will require premium grade fuel. This can go to 45% if one manufacturer's line of V-8 engines all require premium fuel; the PETROLEUM WEEK estimate of 40% was based on advance technical information indicating that only half of this particular line would need premium fuel.

The need for higher grade fuel—and more of it—probably will force refiners to nudge premium grade gasoline up to a national average of 97-98 octane before 1956 ends. (By comparison, average octane rating of premium gasoline in July was 95.8 according to the Ethyl Corp. survey, 94.9 according to the du Pont survey.)

The competitive situation, coupled with the requirements of some 1956 cars for ultrahigh premium fuel, might even spur some refiners to put out a 100-octane fuel before the end of 1955.

Potent force behind this climb to higher octanes is the fact that two 1956 models will be pushing the upper limits of premuim fuel in some areas of the country.

To meet these new, stiffer fuel requirements, refiners may incorporate aircraft fuel components in their premium grade fuels.

Looking at it another way, the octane needs of 1956 cars will shove the sales of premium gasoline up to about 35% of total sales—or about 20-billion gal. (chart). This year premium gasoline is accounting for 33% of sales, or 18-billion gal.

Producers thus can expect higher crude demand in relation to total gasoline output.

As octane ratings go up, gasoline yields go down. Thus, more barrels of crude will be required to meet the demand for greater volume of higher-octane gasoline.

Crankcases on 1956 model cars will require less motor oil, but, on the

other hand, the automatic transmissions will hold more fluid.

Average capacity of crankcases on next year's cars will be 4.9 qt.; this year it is 5.2 qt. However, this does not foretell a corresponding drop in total motor oil demand. The nation's car population is growing larger, and this should offset the downtrend in crankcase capacity. However, if oil-change intervals continue to drop, the industry may be very close to the point where increased car population may be insufficient to offset the combined effect of fewer drains and smaller crankcases.

Offsetting the drop in motor capacity of engines is a significant increase in average automatic-transmission capacity. The new cars will hold about 11.7 qt. each, compared with only 9.7 qt. for 1955. For the most part, the biggest gain is in factory fill of the fluid, which refiners will sell to car manufacturers. For one year's production, this could mean an over-all gain of about 28-million gal. of fluid sold to car makers.

Body and engine changes in the new cars will result in altered requirements for tires, batteries, and accessories.

Increasing popularity of the V-8 engine is expanding the need for spark plugs. About 81% of the 1956 cars will have V-8 engines; this means additional sales of about 2-million spark plugs.

The 1956 models also will mark the complete transition from the old 6-volt battery system to the 12-volt system. This means a steadily declining demand for 6-volt batteries, which were standard on about half the 1955 cars. Oil filters also are gaining in popularity, with almost every second 1956 car having a filter as standard equipment. About one of four new cars will have dual exhausts as standard equipment; another 21% will make it available on an optional basis. This will mean an added market for muffler and tailpipe replacements.

Power brakes and power steering are expected to find increasing favor with motorists. About 24% of 1955 cars produced in the first half this year were equipped with power brakes, either standard or as an option. This is a 5.2% gain over all of 1954. Of 1956 models, 8 will make power brakes standard, while 47 will make it optional.

The picture is similar for power steering. More than 24% of 1955 models were so equipped the first half of this year, as against 19% for all of 1954. For 1956 models, 10 will have power steering standard, with 45 offering it as an option.

Oil benefits in many ways as . . .

Weather Forecasting Improves

Scientists may be on the verge of cracking barriers that now block accurate long-range weather forecasts. If they do, major benefits to the oil industry should result.

The need for such forecasting was brought home with telling effect last week when hurricane Connie swirled drunkenly along the Atlantic seaboard. The U.S. Weather Bureau's expanded hurricane warning system did a good job, but it wasn't enough. As Connie approached the mainland, hurricane alerts were posted all the way from Florida to Cape Cod. Thousands of dollars were spent in feverish preparation.

Then, after sitting in the Atlantic for a couple of days, Connie swung inland, ramming the North Carolina coast. But the alert, in the meantime, had been called off from Delaware north. Preparatory work was undone in some cases. Then capricious Connie veered unexpectedly again, as hurricanes do, catching many individuals and corporations with their weather guards down. The result: many millions of dollars damage.

All this may be avoided, or minimized, if some presently hinted developments in the field of long-range forecasting come to pass.

Dr. Edward Teller, University of California physicist, sometimes called "the father of the hydrogen bomb," last week predicted that some day we may be able to influence or even partly control the weather.

Dr. Teller, addressing the Air Force Assn. convention in San Francisco, said, "We are getting closer and closer to the point where we shall have high-speed electronic computation methods to predict weather." He said "studies in the atomic field have provided much better information recently on the behavior of the atmosphere."

Then he came to the real meat of his talk. "The laws of nature," he said, "will become known in great detail, not just in scientific principles, to the point where we can influence the weather . . . With detailed knowledge of air behavior we can get climatological control."

Dr. Teller did not say when these developments may come to pass, if at all. But similar comments on the possibility of accurate long-range forecasts have been made by other meteorologists conducting studies of their own. No one else has yet dared to predict the day may come when weather not only will be predictable, but controllable, as well.

Accurate long-range forecasts would have sharp effect on all segments of the oil industry:

PRODUCERS could plan drilling and construction projects in accordance with future weather tables.

A ready example is supplied by operators in the muskeg country of Canada. An unexpectedly early thaw in spring could mean a rig marooned for months with no easy means of moving it until another freeze-up occurred. Advance warning here would be quickly translated into dollars saved. A forecast of continued cold would mean extra production.

Offshore operators have a big stake in the weather. Records indicate there are 20 days a year when a ship cannot moor at offshore installations because of fog or bad weather. There are 20 more days when a ship cannot lay alongside the offshore rig, and 5 days

Self-Preservation

It's common practice, out in hunting country, to practice up for the kill by firing a few preliminary rounds at some convenient target—such as a roadside sign. This may be good for the aim, but its rough on the sign. Ohio Oil Co. scored a public relations bullseye by affixing a real target above its sign. This gives the hunter something to shoot at and reminds him of the company's name and trademark. This picture was taken in the foothills of the Rocky Mountains, in Wyoming, near the Continental Divide.

when a ship has to haul away to avoid inclement weather. Untold savings would result if these days could be predicted. The rig crews also would be able to gird for bad weather. And no operator would haul a rig to a new position if he knew heavy seas, or hurricanes, were in the offing.

REFINERS could rely on long-range forecasts to plan runs of gasoline and heating oils.

Under present methods, there usually is a considerable lag in determining the actual amount of fuel consumed during a cold-snap, or the amount not consumed during a late warm spell. Sometimes it takes two or three weeks for the picture to clear up. The refiner relying on day-to-day delivery totals as a consumption barometer is, therefore, often misled.

Suppose, for instance, this time lag occurs in late February, when a decision usually is made on whether to cut heating oil production and boost gasoline output. If the decision is based on a few extra-cold, or extra-warm, days at the end of the month, a refiner might find himself saddled with excess supply or hampered by insufficiencies. A cold April could deplete fuel oil stocks drastically, if a "warm" decision had been made. The opposite also holds true.

PIPELINERS could key construction and maintenance plans to forecasts, thereby effecting huge savings in labor and capital costs.

Pipelaying, being an outdoor operation, is always affected, in some degree, by the weather. Long-range forecasts would enable a pipeliner laying a north-south line, let's say, to concentrate initial activity in the south if the prediction were for unusually severe weather in the north. Man-hours lost would be cut to a minimum, and projects completed faster.

TRANSPORTERS would be able to make, and meet, better shipping schedules.

In addition, having a foreknowledge of what the weather would be like in various sections of the country would permit various transporters to use their equipment to fullest extent. For instance, they could move their stock to potential "short" areas where the weather reports indicated an unusually heavy demand would occur, putting a strain on existing transport facilities.

MARKETERS could minimize storage and sales problems. Today, if correct degree-day data is applied, the supplier knows just about how much oil or gasoline his customer has in his tanks. If the weather can be evaluated far enough in advance, he'll be able to estimate consumption in advance, and the flow from refinery to pipeline and bulk plant to customers' tanks will be smoother and steadier.

Meteorologists say that the oil and gas industry doesn't need 100% accuracy.

Weathermen believe that development of reliable "norm trends" for a given area would in itself be of tremendous value. All weather stays within a definite climatic range for any given area. The trick is to determine how far from the so-called norm the weather will depart on a given day, or over a longer period.

A refiner or marketer does not need to know, generally, what specific temperatures will occur on any given day. It would be sufficient if either could be given a workable degree-day forecast over a longer time period, say a month or more.

Many oil companies are setting up their own weather departments. Others are hiring private meteorological consultants.

Those firms whose operations are broad enough are finding it profitable to employ their own weathermen. Many more are turning to contract forecasters. This is especially true in the Gulf Coast region, where the U. S. Weather Bureau has only one station, at Burrwood, La. Private forecasters maintain their own reporting stations along Gulf Coast to make weather observations and record tidal action. These forecasters keep oil companies advised by radio, when necessary, and by periodic reports.

But the base work is done by federal and state weather agencies. At least 7,000 U. S. weather stations now have accurate records dating back 40 years or more. And the raw materials, with which all forecasting services work, come from the U. S. Weather Bureau. The company and private experts then take the data and tailor them to their own location and needs.

The cost of weather studies is not low. A contract forecaster, depending largely on what he is asked to do, may charge from $300 to $500 a month for daily forecast service.

The American Petroleum Institute has set up a committee to study the problem of long-range forecasting. But difficulties in setting up forecasting standards may block issuance of a final report.

The committee, headed by Dr. William Sweeney, Esso Standard Oil Co., has been at its task for more than a year. However, Dr. Sweeney and other members of the committee feel that considerably more basic research is needed for a scientific approach to long-range forecasts.

Steel: Tight; Getting Tighter

The supply of the oil industry's kinds of steel is getting shorter and shorter. Oil company buyers are being put on a quota basis, with order books filled well into fourth quarter.

Steel mills have been beset by heat, vacations, and equipment failures this summer, making it well nigh impossible to maintain production schedules. The heavy volume of new orders is pushing them even further behind in their efforts to meet mounting demand from all quarters.

Though none of the steel firms PETROLEUM WEEK talked to this week would admit to allocations, they do report existence of quota systems. One firm calls it "restricted order acceptance." But the fact is that many customers have been on quotas for the past several weeks, with limits extending through November.

Demand for oil country tubular goods is running well over present steelmaking capacity—double in the case of some steel firms.

One large oil industry supplier says that it is only in alloy-steel tubular items—necessary for deep-well drilling—that there is a shortage. But another steel company official says the shortage extends to oil industry products made of carbon steel.

All sources agree that demand for alloy-steel products has been far in excess of supply for many months, with distribution of these items on a quota basis.

Steel men say the stepped-up drilling program, particularly in deep wells, has accentuated the shortage. The problem is further complicated by lack of inventory in the hands of many drillers.

Many independent dealers and distributors haven't had the dollars, or facilities, to build up sizable inventories. So when the drilling program increased in tempo, they were short. Although a gray market hasn't been reported yet, it's considered a likely development before the year is out.

Steelmakers realize there is a lot of water in standing orders which would be quickly squeezed out if conditions should ease. But oilmen figure there is a better chance of getting what they want by placing duplicate orders.

Supplies of plate and line pipe are both tight, but the industry isn't being pinched by full-fledged shortages of either—yet.

PETROLEUM COMMENTS

By W. M. Jablonski

Good Demand, Yes, But Why Spoil It?

The oil industry seems to be doing its level best to flout the law of supply and demand.

Sure, demand is wonderfully strong right now. Prices of most products are firm. Distillate heating oil prices have even advanced fractionally at the Gulf and East Coasts in the past couple of weeks (though they've dipped some in the Midwest).

But just because demand is good, that doesn't mean the law of supply and demand can be ignored. If supply exceeds even a high demand long enough, price weakening will be inevitable.

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And the refining branch, the central operating control of this big industry, seems bent on accomplishing just that.

For some strange reason, refiners are acting as if they were still in their midwinter peak—when demand runs some 1.5-million b/d higher than in the summer slack. All during June, July, and into August they've been processing 7.5-million to 7.6-million bbl. of crude daily. That's above even last February's peak of 7.55-million b/d.

It's easily an excess of 250,000 to 350,000 b/d over what most industry sources estimate is needed.

The result: Distillate oil stocks are piling up at an unheard of rate. Already some 57-million bbl. have been added to storage since last spring—a 90% increase. Stocks in primary storage are 14.5-million bbl. higher than a year ago.

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It would be one thing if the heating season were already close at hand. But normally heating demand doesn't pick up sufficiently to start drawing down stocks until early in November.

So there's still two and a half months of stock build-up ahead. And at the rate the industry is running now, it may well run out of distillate storage space before that. Nobody seems quite sure just what the physical limit of distillate storage is. Some think it's somewhere around 147-million bbl. Yet stocks are already over 120-million. Even if refinery runs are trimmed to, say, 7.4-million b/d, it looks as if distillate stocks may be heading for somewhere over 150-million bbl. before the end of September.

All this spells trouble—serious trouble—for the fall months.

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Nor is that all.

If there's a sloppy market in late fall, it may take well into January or February to work off the excess. Particularly if we should have milder than "normal" weather—which has been the case in four out of five past winters.

Last winter, when the weather was almost "normal," heating oil demand was exceptionally good. Most industry sources now believe demand in the six winter months ending next March will probably not run much more than 5% above last winter's high level, or 7% at most. This, of course, assumes "normal" weather again. If it proves milder, demand will be that much lower. It would take a really abnormally cold season, it's believed, to boost demand to anything like 10% above last winter.

Here comes the rub. Even if refinery runs are cut back to an average of no more than 7.4-million b/d during the entire six winter months, it looks as if the industry will still end up with excessive distillate stocks by next March. If demand gains the expected 5%, stocks may still end up some 83-million bbl.—21-million more than last spring. It would take a really whopping winter to bring an inventory balance.

So, the sooner refinery runs are slashed, and sharply, the better.

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There another fly in the oil pool, too. The pressure for high refinery runs may be increased this fall by a boost in crude oil producing allowables. State regulatory bodies are interested primarily in crude ouput. And rightly so. For months producers have been chafing at the bit over their allowable cuts. They've been told of the growing seasonality of the business: to expect cutbacks as a normal seasonal thing in summer.

With the summer drawing to a close, they'll be looking for some of this seasonality in reverse. Particularly since crude oil stocks have been drawn down below normal third quarter expectations.

The really odd thing is that refiners, for their part, completely ignored the summer seasonality factor they had been preaching. Back last spring they started out fine. Like a chorus at the Bijou, one after another announced cutbacks in crude runs.

Then, by June, everyone just forgot about it, for some unexplainable reason. Unexplainable, because every refiner one talks to today personally deplores the excessive rates. Evidently, only the "other fellow"—an elusive character—is to blame.

It would seem time for everyone to take another hard look at the facts—and to act accordingly. Otherwise, the best alternative might be for the industry to get down and pray: for a very early and a very cold winter.

No More Fast Writeoffs

Fast tax writeoffs—at least as far as they affect the petroleum industry—are just about dead.

Defense Mobilizer Arthur S. Flemming announced last week he was suspending 38 expansion goals—including six petroleum targets—pending a review to determine whether they are really necessary to fill defense mobilization needs.

Meanwhile, applications for certificates of necessity that are pending will not be processed further. The same holds true, of course, of any new applications that may be received.

The action puts 172 oil-industry applications, totaling $678-million, on the shelf. And they are likely to stay there. Only those goals with a "direct defense relationship" are expected to be resurrected.

Five projects just got in under the wire. Among them: American Louisiana Pipe Line Corp.'s 1,203-mi. system from Louisiana to Michigan (writeoff was 25% on $128,212,000); and a refinery and an alkylation unit for Tide Water Associated Oil Co. at Delaware City.

Twenty goals with a straight defense tie-in are still open. One is the target of 30,000 b/d capacity for alkylate, a key ingredient of aviation gasoline. Operation of alkylate plants in peacetime is generally uneconomic.

Nineteen expansion goals are closed outright by the Office of Defense Mobilization order, because review indicates sufficient capacity already exists. One is the goal for compressed gas cylinders.

Oil industry expansion goals which are suspended include:

- **Refinery capacity** — Addition of 400,000 b/d in 1954 and 250,000 b/d in 1955, to reach total capacity of 8,750,000 b/d by Jan. 1, 1956. This has already been substantially fulfilled.
- **Processing of natural-gas liquids**—Construction of 200,000 b/d a year of net capacity in 1954 and 1955 to reach a total of 1,280,000 b/d.
- **Crude and product pipelines**—Addition of 34,200 mi. Authorizations to date are reported well short of this goal.
- **Oil storage capacity** — Construction of 75-million bbl. capacity in both 1954 and 1955 to reach a total of some 1.4-billion bbl.
- **Natural gas transmission lines**—22,500 mi. of line 16 in. or bigger, and 53,100 mi. of smaller line. Mobilization officials have said expansion has been "substantially short" of this.
- **100 ocean-going tankers** — ODM had reported "good progress" on this program.

All told, 1,906 certificates of necessity have been granted for petroleum industry projects estimated at $4,852,000,000 since the program began in 1950.

Oil's expansion plans, however, may not be hurt as much as it might appear. Here's the reasoning:

Under the tax laws as overhauled by Congress in 1954, the advantage of "rapid" tax writeoffs over normal procedure was narrowed. Business now can write off about two-thirds of the cost of new facilities in one half of its tax life under regular tax law.

The ODM program allowed rapid tax amortization of only a given percentage of new facilities within five years. For example, ODM allowed a rapid tax writeoff on only 25% of the cost of the average pipeline project approved.

The difference will not be vital, it is felt.

Rapid tax amortization does not change the amount of taxes ultimately paid; it merely shifts the burden to later years.

What's New / IN THE INDUSTRY

The Texas Independent Producers & Royalty Owners Assn. and the Texas Railroad Commission both want gas production put on a ratable basis.

William J. Murray, Jr., chairman of the commission, told TIPRO members last week that gas production on a ratable basis, rather than pipeline proration, will assure equity to all producers. He said previous efforts to accomplish this were "premature," but that the commission is now "in position to make real strides forward."

In voicing TIPRO's agreement, A. P. King, president, said ratable taking is "fundamental to a healthy gas industry."

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General Petroleum Corp. is trying to keep the newly formed Gilmore Oil Co. (PW—Jul.8'55,p84) out of the Pacific Northwest market.

GP bought out a firm named Gilmore about 10 years ago, and insists it still holds all rights to the name. Last week it applied to an Oregon court for an injunction against the new company's use of the name and a declaratory decree giving GP sole rights to it.

The newcomer insists that GP has never used the Gilmore name—indeed, that it was dormant even before GP took over the old Gilmore company—and that, therefore, GP has forfeited its rights to the Gilmore trademark.

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Sinclair Refining Co. and Harris County, Tex., have compromised their tax dispute (PW—Aug.5'55,p13).

The dispute concerned some 416,000 bbl. of crude that the county claimed was in storage at Sinclair's Pasadena (Tex.) refinery. Sinclair contended the oil was in transit to its Marcus Hook (Pa.) refinery. Oil in storage is taxable; oil in transit is not.

In the compromise, Sinclair conceded that some 100,000 bbl. of the crude could be used in the local refinery's working supply, and agreed to pay tax on it. The amount involved is only $2,500 to $5,000, but Carl S. Smith, county tax assessor, hailed the concession as a "victory of principle."

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More oil money is going into the search for uranium. Last week Continental Oil Co. announced that it is going into the new field, and a multimineral firm was formed in San Antonio with oil and gas backing.

Conoco's uranium exploration project is part of the company's $20-million expansion of operations in the Rocky Mountain states. L. F. McCollum, president, says the company has developed some "hot" techniques for discovering the ore, but that they are being kept secret for competitive reasons.

McCollum adds that Conoco doesn't consider uranium an immediate serious threat to oil as a source of energy. He describes the company's business, however, as that of "producing energy and fuel," thus giving oil and gas no exclusive status in the firm's future.

The new company is Cullen Minerals Corp.; Lucien Hugh Cullen, former president of Atomic Power Uranium Corp., is its head. Several independent oil and gas operators are among the directors. The company will search for oil, gas, and uranium.

Magnetic recording: It gives . . .

More Seismic Data Per Shot

- Magnetic recording, though not brand new, is still in the "crawling" stage. It's catching on fast, has a lot more room to grow.
- Its chief benefit: A lot more data with one shot than can be obtained by several shots under conventional methods.
- Records on plastic tapes or discs can be played over and over without the expense of reshooting in the field.
- Hooking magnetic recorders to electronic computers may permit far more detailed interpretation of seismic records than is now possible.

Magnetic recording of seismic data on plastic tapes, or discs—a technique that's still in the "crawling" stage—is making a strong bid to revamp petroleum seismograph work.

The method is catching on fast, and has proven capable of yielding to the industry a lot more exploratory data from reflected sound waves than can be obtained by conventional seismograph methods.

The principle of seismic exploration is basically simple. Shock waves are set off at or near the surface of the earth. As they travel downward, some of these waves encounter underground layers of rock, and bounce back to the surface.

They travel very fast. The returning waves are recorded on sensitive instruments, and the time interval is used to plot the exact position of the underground structures.

Seismic sound-wave detectors, called "geophones," pick up the returning sound waves, or "signals." Complex electronic gear makes the necessary computations to trace the subsurface strata. A trained interpreter then pieces together the story and maps the subsurface contours and configurations. This technique locates potential oil traps by revealing certain structural formations that could collect and hold oil and gas.

In the conventional system, shot holes are drilled into the ground and dynamite is packed into the hole. The detonation of the dynamite produces the shock wave, and geophones, set on the ground around the shot hole in "patterns," capture the returning signals. The impulse of the explosion and the reflected signals are photographically recorded on paper tape.

But conventional methods of seismic exploration have certain drawbacks. Generally speaking, the higher frequencies from the shock wave reflect back from the relatively higher formations and are lost beyond that point. The lower frequencies travel down much farther before coming back.

A compromise must be reached. It's done by "aiming" the shot, so as to get the best possible picture at a more-or-less given depth. The band of frequencies best suited to reflect from that depth range is chosen, and the geophones are set to "screen out" practically all but those desired frequencies.

Other variables are determined, too, such as optimum depth of the shot hole, size of the dynamite charge, etc. If the picture at other depths in the same location is also desired, several shots must be made—all requiring changes in the variables.

Magnetic recording overcomes these drawbacks. Here are some of its advantages over conventional methods:

- **A single shot will give more data** than several shots by conventional recording methods. This is because a wide range of frequencies (a "broad band") can be picked up with a single shot.
- **One record can be "read" for many different depths.** Computers do this by filtering, in the laboratory; an infinite number of combinations are possible.
- **No reshooting is required if a mistake is made in judgment.** Under conventional methods, if a seismic crew "misses" in selecting the optimum frequency range, reshooting is necessary. But with magnetic recording, the tape can be run and rerun until the "correct" frequency is found.
- **Unwanted "noise" can be screened out** by the interpreter. With conventional methods, vibrations in the earth other than those made by the dynamite blast, go right on the record. But with magnetic recording these unwanted sounds can be pushed into the background by filtering.
- **Records can be reviewed over and over,** any time. This is important, because, several years after shooting one prospective oil area, the decision might be reached by a company to study the area again, but at a different depth. Under conventional methods, this would probably mean reshooting the area. But with magnetic recording, it would be necessary only to haul out the record, and run it over and over again with the proper filtering, to gather the new information.

Use of the magnetic record is spreading rapidly; the technique is going to do a lot of growing.

Geophysical Service, Inc., of Dallas, one of the companies most interested in the magnetic-recording technique, put its first experimental unit into the field about a year ago; its first commercial unit went into operation only last October. It now has 15 units.

Humble Oil & Refining Co., which contracts its seismic crews, is using magnetic recording equipment on about one out of every six crews. Next year the company probably will be using magnetic recording equipment on about half of its contract jobs.

Research on magnetic recording is continuing at a rapid pace. Practically all of the major petroleum-research laboratories are engaged in projects dealing with the technique. But patent plans and the push for competitive position cloak much that is going on.

One innovation has already resulted from the magnetic recording method: Big weights are being dropped on the ground to set up the shock waves instead of dynamite.

It's generally agreed that dynamite

is not the best means for originating a shock wave. It tears a hole in the ground, and it concentrates its shock in a narrow band of frequencies. It is used because, up to now, it has been necessary to create a big wallop in order to blanket out as many other earth vibrations as possible.

At least 100 years ago, a shock wave was induced and reflections crudely recorded by thumping the earth with something resembling a pile driver. But, until magnetic recording came along, it was too hard to distinguish this kind of induced shock wave—the fidelity just wasn't good enough.

With magnetic recording, it is possible to pick up "thump" waves as identical repeating patterns. The other vibrations in the earth are erratic. With perhaps 25 or 30 "drops" of a heavy weight, the pattern of the induced signals can be separated readily ("integrated") from the noise.

McCollum Exploration Co., Houston, has been working on the dropped-weight method for several years. About two years ago the company put its first commercial unit into use, and it now has seven in the field.

A "weight truck" carries a 3 x 5-ft. slab of steel, weighing 6,000 lb., hanging from a special frame in the rear. At regularly spaced intervals, the truck drops the weight a distance of 9½ ft. to the ground. Special equipment in an accompanying truck, and later in the laboratory, make the record on a long broad ribbon of plastic tape, correct various factors, and eventually turn out a photographic paper record.

Magnetic recording may someday be harnessed to electronic computers. If this happens, much more can be done to interpret the seismic data than is possible now.

The seismic record contains a lot of basic information that is either impossible or impractical to interpret visually or by hand computation. Various formulas already exist to extract much of this information. They are so complex that even a mathematician would need months to work out just one.

It is entirely possible that automatic computers can get the solution within minutes. But the computers will need a lot of associated equipment to help do the job. And that's the area about which companies aren't talking much.

Men involved with the method foresee the establishment of regional electronic centers, crammed with computers and special gear, wringing out much more from the record than is now possible.

Magnetic recording is a premium service now because units cost more to build and maintain than conventional recording units. But in many situations it can save enough money to make up for the extra cost.

Today a conventional unit for use on land costs about $18,000 to $22,000. Contractors charge from $15,000 to $18,000 a month for a seismic crew, depending on location. Offshore the charge may run as high as $50,000 to $100,000 a month.

A magnetic-recording unit costs about $25,000. A crew costs about $1,500 to $2,000 more a month than for a conventional unit.

Although the magnetic-recording equipment costs more than conventional recording equipment, there are several reasons why its use may be cheaper, in the long run:

- When a number of shots would be necessary in conventional methods to cover the wide depth ranges in which a company may be interested, the magnetic records can be used to take only one shot to cover the whole range.
- Magnetic records can be played and replayed in the laboratory, and new information brought out in infinite ways merely by varying the filters. They can also be saved and replayed years later to get information.
- Savings in shot holes alone on many jobs are sufficient to offset the cost of the magnetic equipment by comparison with the cost of conventional equipment.

What's New / IN PRODUCTION

Offshore Lands Leased

The California State Lands Commission awarded three submerged-lands leases to six oil companies last week. The companies were high bidders when the tracts were offered earlier in the month.

Humble Oil & Refining Co., Monterey Oil Co., and Seaboard Oil Co., jointly bid $3.3-million for the shoreward half of a 2 sq. mi. block, and $1.3-million for the seaward half, lying off the California coast between the cities of Huntington Beach and Newport Beach.

Richfield Oil Corp., Hancock Oil Co., and Signal Oil & Gas Co., made a joint bid of $516,776 for a 1 sq. mi. lease adjoining the larger one.

Development of oil production on city-owned "tidelands" bordering the state lands forced California to open up the area to drilling.

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Socal Makes In Situ Study

A pilot-scale field test of the "in situ" combustion process of secondary recovery is being made by Standard Oil Co. of California. Objective will be to determine if thermal recovery (PW—Jul.29'55,p21) out-performs water and gas-injection methods on certain types of structures and certain gravities of crude.

California Research Corp., a subsidiary of Socal, is conducting the tests on Standard fee property in Midway-Sunset field, near Maricopa, Calif. Crude produced in this field is about 20-gravity.

The system involves injection of high-pressure compressed air into depleted oil sands. Oil in the vicinity of the injection well is ignited, and the resulting "heat front" is forced outward by air pressure, toward surrounding production wells. As the heat wave moves through the oil sands it lowers the viscosity of the crude so it can move to the producting wells.

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Oilers Highlight Drilling

Three new oil discoveries—two of them in Louisiana offshore areas and one in West Texas—and a promising gas-distillate discovery in the Gulf off Louisiana highlighted drilling and development activity last week:

- Shell Oil Co. brought in an oil well, after drilling through more than 13,000 ft. of solid salt, on the north flank of Cote Blanche salt dome in St. Mary Parish, La.—the second venture to pierce such a thick mass of salt and eventually hit oil. The well, Caffery et al 2, is 1,300 ft. east of a gas-distillate discovery made earlier. The No. 2, on production test, flowed 228 bbl. of 33.5-gravity clean oil, plus 232,000 cu. ft. of gas a day, from 14,202-15 and 14,225-35 ft.
- Gulf Oil Corp. brought in an oil discovery in Block 154, Ship Shoal area of the Gulf, about 65 mi. southeast of Morgan City, La., on federal "tidelands." The well is flowing 595 b/d of 29-gravity oil with no water. Total depth is 6,919 ft., with flow coming from perforations between 6,196-226 ft. A confirmation test will be drilled from the same offshore plat-

form, which stands in 55 ft. of water.

• Stanolind Oil & Gas Co. has a prolific discovery from the Wolfcamp and Permian pay zones in Andrews County, West Texas. Its 1-BR University recorded heavy flows of oil on drill-stem tests of the Wolfcamp, between 9,110-233 ft. In a one-hour test, the well flowed oil into tanks for 30 minutes at a rate of 140 bbl. per hour with no water. A drill-stem test of the Permian from 4,465-560 ft. showed 64 bbl. of heavy oil- and gas-cut mud, with 15% oil.

• Continental Oil Co. has tested gas and distillate in an apparent new discovery off the Louisiana shore. Its A-2, in State Lease 1,192, was cleaning up on a 12/64-in. choke after being perforated from 11,090-96 ft. Flowing tubing pressure was 6,175 psi. Conoco is preparing to gauge the flow of distillate and probably will test other zones. The well is plugged back to a depth of 11,132 ft.

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The Clear Fork pay zone may be the salvation of operations in the Spraberry Trend area of West Texas. Some 10 mi. south of the Four Corners area (Reagan, Midland, Upton, and Glasscock Counties) where Rowan Oil Co. et al 1-15 Schwertner made the first completion in the pay, Rutter & Wilbanks 1 West was reported testing the Clear Fork after perforating last week. Newest completion is Sinclair Oil & Gas Co. 42-B Lillie Midkiff, which extended production in Clear Fork 2¾ mi. west in northeastern Upton County. The well flowed 175 b/d of 38.7-degree gravity oil.

This is the eighth Clear Fork well finaled in the Trend, with three each in Upton and Glasscock Counties and two in Reagan. Indications are now that the Spraberry Clear Fork producing area may cover thousands of acres in the Spraberry Trend. Hundreds of wells may find it profitable to perforate and produce from this zone.

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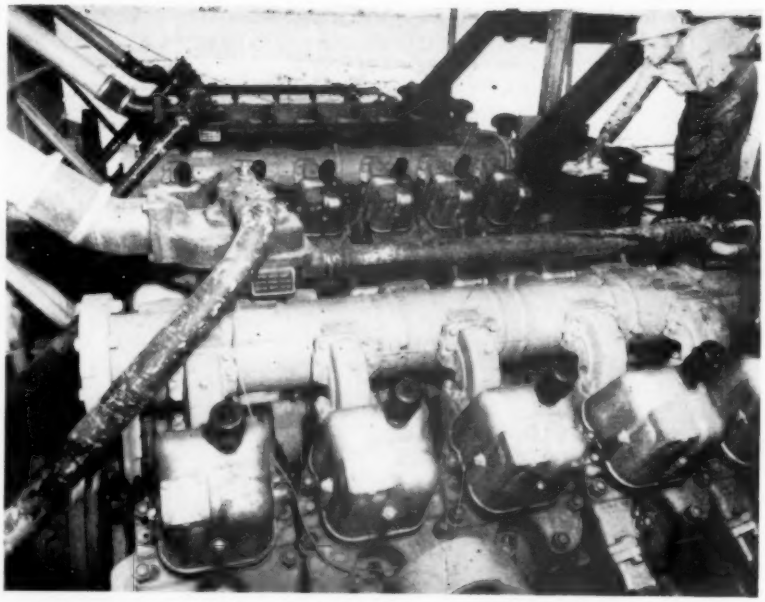
Shell Oil Co. has completed another discovery in the Strand area southwest of Bakersfield, Calif. The well, 83-8 KCL, located in 8-30s-26e, 12 mi. southwest of Bakersfield, flowed 400 bbl. of high-gravity oil in 20 hours from the Upper Stevens, from 8,090-100 ft., and the Lower Stevens, from 9,771-852 ft. These sands are of Miocene age. Completion proves up new production 2 mi. east of Shell's 1 Posuncula, which was discovered in June. Shell holds 2,100 acres in the Posuncula area and 1,840 acres in vicinity of the new well.



A worker cleans one of three Waukesha V-12 engines, which provide Mercury's new rig with power for deep-hole drilling. The engines can be fueled with butane or natural gas; natural gas was used in the first hole.

Giant Rig for Deep Wells

Mercury Drilling Co.'s giant rig cost more than $500,000.

Mercury Drilling Co.'s new, high-powered rig (left), largest operating in Oklahoma, is capable of drilling to 20,000 ft.

It was designed by Mercury; components and equipment were supplied by several firms; and it was assembled by C. W. Cotton Supply Co., Tulsa.

The rig was put in service about three months ago and has drilled one hole, about 13 mi. west of Lindsay, Grady County. It drilled the first 7,500 ft. in 16 days, averaging almost 470 ft. a day, and drilled the 12,257 ft. total depth in 80 days, to average about 154 ft. a day for the entire job.

The rig has three Waukesha V-12 gas-butane engines (above). With butane as fuel, the engines have a hoisting rating of 780 hp. each, for a total of 2,340 hp. But on natural gas, which was the fuel used on the first hole, the rating is 870 hp. per engine, for a total of 2,610 hp. By removing one of the engines, and part of the substructure, the rig can be converted into an 8,500-ft.-maximum-depth rig for shallow drilling.

Other vital statistics: The rig has two Gardner-Denver Model GXR slush pumps. The mast, a Lee C. Moore 142-ft. cantilever type, has a 900,000-lb. capacity. The rig carries 14,000 ft. of grade "E" drill pipe and 12 drilling collars, 7 in. in diameter by 30 ft. long.

What a General Inflation Would Mean to Oil

There's more talk about inflation now than at any time in the past two years. And well there might be. In June we had the big wage increases. Then, price increases for raw materials: steel, copper, aluminum, chemicals, building products. New machinery is costing more. Wages are still rising. Bank loans are feeding lots of extra money into the economy. Can the general price level go any way but up?

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This question is extremely important to the oil industry. There have been plenty of times when the oil companies held their prices steady while other prices were going up a bit here and there. But in a general inflation—a rapid and substantial increase in all kinds of prices—the pressure on costs becomes so great that oil prices must go up too.

Also, in a general inflation, it's relatively easy to raise prices. Both workers' paychecks and corporate profits go up—with some delay—to meet the rising price level. If they don't have quite enough to spend, people will borrow in such times. So raising prices is a cinch. On the other hand, if consumer prices generally are stable, then any particular industry may have trouble boosting its prices much—no matter what's happening to costs.

At present, high costs already provide a strong incentive for raising the price of domestic crude oil. Large supply and competition act as restraints. A general inflation in the economy would probably raise costs enough to blow the lid off and assure a crude price rise. On the other hand, if there is no general inflation, world supply is so large that some people think the crude price could even break downward.

So a lot of oil chips ride on the next move in the general price level for all commodities. Do we get inflation in the next six to twelve months? Or don't we?

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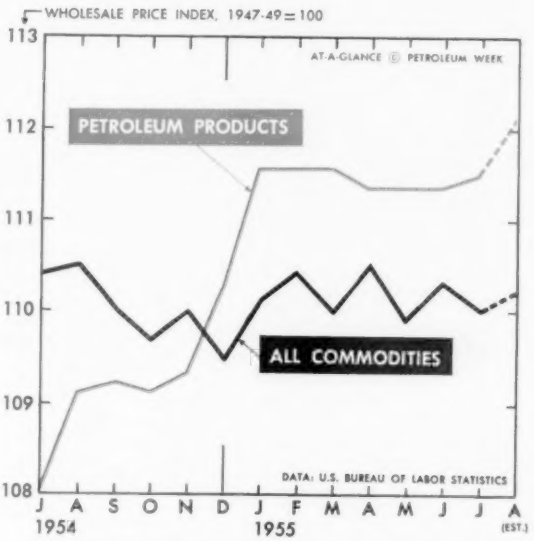
Strangely enough, we may not get it—despite all the increases in labor and raw materials costs. For the past year (chart), the over-all price level hasn't changed much, despite some pretty fair wage increases and higher prices for materials. Here's why:

- There's been a steady decline in farm and food prices. Latest reports indicate they'll slide a bit more this fall.
- For most other consumer items, competition between sellers has been so keen that prices haven't gone up much. Higher costs just squeeze profits. It works the same way on fabricated items for industry.
- The tremendous increase in industrial capacity has held down profits in two ways: (1) by increasing competition; and (2) by enabling companies to produce in higher volume and thus lower costs.



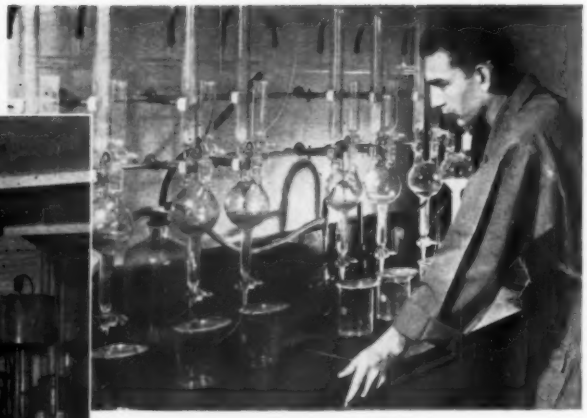
WHOLESALE PRICES generally have been stable for the past year, despite rising costs in most industries. Petroleum prices moved up from a depressed level in 1954, then stabilized for a while. Now the question is whether prices generally are going to move up sharply, and carry petroleum prices higher, too.

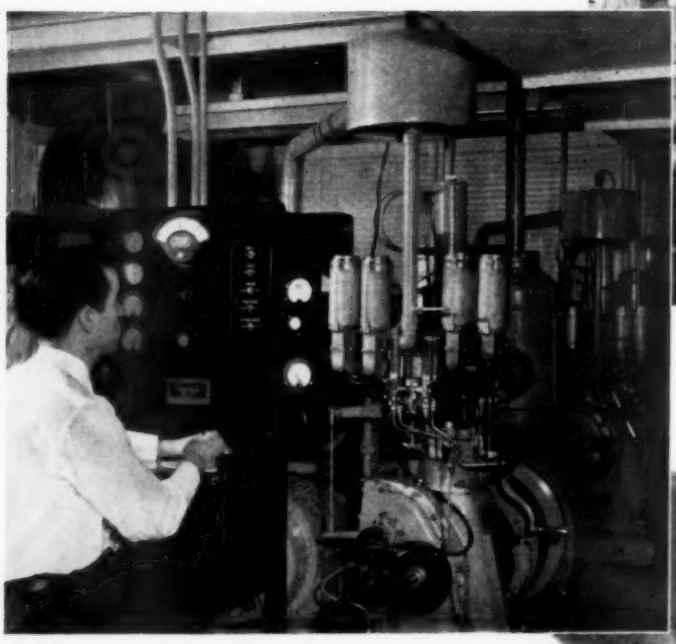
The result has been an increase in output all through manufacturing industry, which has helped maintain over-all profits despite smaller margins per unit. And the farmers, at least the efficient ones, have been doing the same thing. There seems to be no reason why this can't keep up, since we still have considerable unused capacity in both industry and agriculture. It's a much better way for the economy to work than riding on a spiral of price increases.

* * * *

It's that spiral idea that worries economists now. Lately, the boosts in wages and materials have been coming so fast that people may start "scare buying"—building up inventories in anticipation of more price increases. That kind of buying puts still more pressure on prices and consequently winds up in a speculative boom.

But the government is already moving strongly to head off such a development. The Federal Reserve Board, which regulates bank credit, has served notice on both bankers and businessmen that the credit to support a speculative boom will not be forthcoming. Washington is determined to stop inflation. It won't be easy. But they just might do it.





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Du Pont's comprehensive services are as close and as handy as the telephone on your desk. In a matter of minutes you can have assistance in more than a score of them—technical, safety, and marketing.

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Check over the list on the opposite page. See if there isn't some way we can help you out—right now. Then just pick up your phone (or write) and tell us your wishes.

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2. Blending plant design and construction engineering services. These include complete plans and special consultation.
3. On-the-road performance testing of your products by Du Pont Fuel Test Cars.
4. Fleet customer service by engineers ready to help you solve a fuel performance problem for a big customer.
5. Research is one of our long suits at Du Pont. If a particular problem is bothering you, perhaps our work can supplement yours for a quicker solution. Ask us about it.
6. Our specialized knowledge of chemical additives is always at your service. Whenever unusual problems arise, our chemists or engineers will be glad to lend you a hand in helping find the solution.
7. Technical literature covering many facets of additives use and research are available from Du Pont.
8. Improved tetraethyl lead handling equipment, such as the Metal-Flex unloading hose and the TEL Siphon Starter, has been designed and made available to the industry by Du Pont.

Safety

9. The Lead Hazard Clinic, covering all phases of safe TEL handling, makes an ideal supplement to your own training courses.
10. Easy-to-understand visual aids, such as our "Tank Talk" cartoon booklet, are excellent safety reminders for your personnel.
11. Stand-by service at tank entries, is quickly obtainable from Du Pont by telephone or telegraph.
12. "Maintaining Hygiene in Tetraethyl Lead Operations," written by 3 Du Pont doctors, is an authoritative book for your medical staff.
13. Speakers service—our medical personnel will be glad to address your employee safety meetings on the safe handling of TEL.
14. Movies on safety and other subjects can be readily obtained from Du Pont.

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15. Our new nationwide survey—"The Service Station Operator" gives dealer attitudes on such subjects as customer credit, dealer meetings, price wars and many other important aspects of service station operation. The first of five reports is now available.
16. Service station customer buying habits have been thoroughly studied in our documented survey, "The Service Station and the Motorist." It probably contains many of the answers you are looking for.
17. Visual aid presentations prepared by Du Pont, make ideal material for use in your dealer meeting programs.
18. Customer complaints about gasoline quality can be handled in a salesmanlike way by your dealers. We have a new movie, "When the Customer Says 'KNOCK,'" and a series of folders showing that "knock" is seldom the fault of the gasoline.
19. Advertising and sales promotion kits, prepared by Du Pont, can help you capitalize the advantages of additives in your fuels and lubricants.
20. The Du Pont quarterly survey of gasoline quality keeps you up to date on competitive octane standings and TEL content.
21. Our cartoon movie, "What Makes A Gasoline Good," can be used to show dealers and customers how quality is built into gasoline.
22. To help keep your dealers informed on the latest technical advances, members of our technical staff are available to address your meetings on a variety of subjects.
23. For your industry public relations, Du Pont contributes such programs as the "Magic Barrel Show."

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From FIELD . . .

Reservoir characteristics of new and old wells alike are studied to find methods to increase oil recovery.

ONE HUNDRED eighty-three billion barrels.

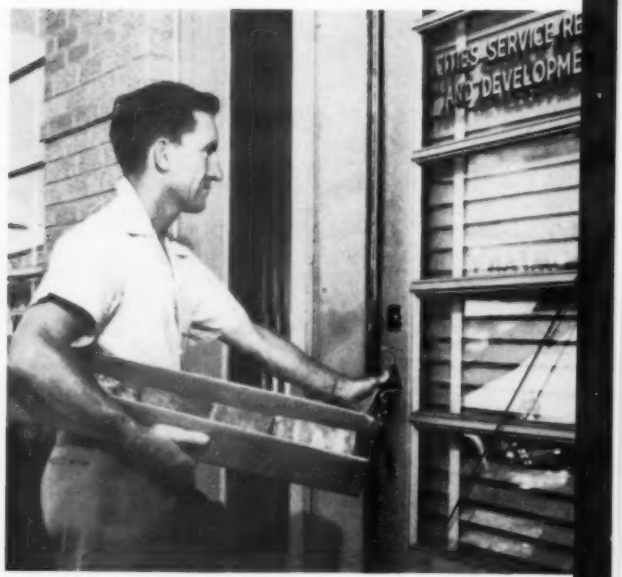
That's the amount of oil that may have to be left in the ground in known U. S. oil fields, according to a recent report by an Interstate Oil Compact Commission committee, unless improved and more economical secondary recovery methods are found. The committee's estimate was that eventually the known fields will produce 88-billion bbl. by primary and secondary recovery methods, or only 32.5% of the estimated 271.3-billion bbl. originally in place.

Today, secondary recovery accounts for about 19% of total U.S. crude oil output. The industry hopes eventually to increase this percentage sharply.

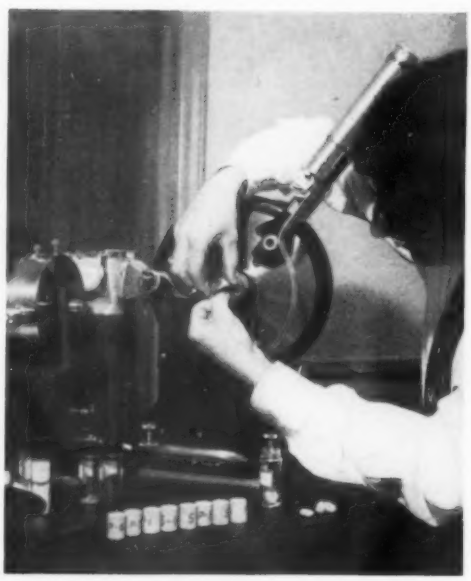
The anticipated long-term growth in petroleum demand, increases in costs of discovery and development of new fields, and the increasing percentage of dry holes drilled annually makes it important that the industry realize a higher ratio of recovery from known oil reservoirs.

This presents a strong challenge to the oil industry. And oil company laboratories all over the country are conducting extensive research to find more efficient ways of getting the oil out of the ground. Typical of this activity are the Tulsa Laboratories of Cities Service Research & Development Co.

to LAB . . .



Bennie Heinze, research chemist, brings in new well cores for detailed analysis of formation behavior.



Underground flow patterns and reservoir fluid saturation are studied in this x-ray diffraction device.

Research Aids Oil Recovery

Dr. Michael J. Rzasa, lab manager, examines plug from a well core.

Well head samples are tested in this instrument to determine fluid physical properties.

Reactions of fluids to pressures and temperatures are also tested.

Bottom-hole stresses and pressures are simulated in this machine designed in the laboratory shop.

Various acids are tested in the lab to find better treating methods for increasing permeability of underground rock formations.

Seek New Role for 'Bugs'

Tiny "bugs"—microorganisms that thrive on petroleum hydrocarbons—may eventually hold the key to several possible new developments that will have far-reaching effects on the petroleum industry. The latest plan of laboratory experts is to try and use these bugs as a means of getting the last trace of oil out of refinery wastes. This would be a big step toward final elimination of stream pollution, if they're successful.

There are other fascinating possibilities for these bugs, now being studied in various oil-company research laboratories. Here are a few:

- Getting bugs to "sniff out" gases originating in underground deposits, as a major aid to exploration.
- "Hiring" bugs to cut down on corrosion and to eliminate bacterial plugging of oil formations. They might even be used someday to "fracture" an oil formation, and generate stronger "gas drives" within a field.
- Using bugs to do refining chores now carried out chemically by means of bacterial fermentation. Perhaps someday we will be actually eating foods made from natural gas—thanks to these tiny creatures.

The study of petroleum microbiology goes back to about 1920. Microbiological researchers have been fascinated by the prospects of utilizing friendly bacteria to improve present operations—or to make possible new ones. And almost every industry research laboratory is concerned with curbing the damage wrought by harmful bacteria strains. It is the turning of microorganisms into an aid instead of a hindrance that has occupied much of the time of these researchers ever since they started bug study.

Now Magnolia Petroleum Co. is about to launch a microbiological research program designed to solve the problem of getting rid of the last vestige of oil from refinery wastes.

Expensive and elaborate refinery waste-disposal facilities are in use all over the country. But none of them gets that "last bit" of oil out of the waste water. It is this waste that causes stream pollution, and which has more than once gotten a refiner in dutch with fish and game commissions and conservation authorities and it is this "last bit" that Magnolia thinks it can get rid of with bacteria.

Dr. John B. Davis, Magnolia microbiologist, thinks that each of the major categories of microorganism—bacteria, actinomycetes, filamentous fungi (moulds), and yeasts—include strains which use hydrocarbons as their "energy source." To put it more informally, they literally eat hydrocarbons. They are known, technically, as "hydrocarbon oxidizers."

Biggest part of Magnolia's problem, Davis feels, is to find the best strain of bugs to use, and the best combination of circumstances under which they can "function."

Davis will base his research program on these two prerequisites: (1) The water will have to be "fertilized" with chemicals—such as nitrates and phosphates. This will "entice" the bugs to grow. (2) An abundance of oxygen will be necessary so the oxidation process can be speeded up. So the water must be agitated. The bugs will best attack the oil at the point where it meets water, so agitation will also provide more surface for contact.

The most exciting possibility for utilizing bugs is to detect new oil deposits. This hasn't been either proved or disproved, but the possibilities seem good.

"Bacteriological exploration" is based largely on the theory that bugs that are hydrocarbon oxidizers will thrive and multiply in hydrocarbon gases seeping to the surface from an oil reservoir. A number of variations of this theme have been indicated as possible in research projects. Patents have been issued on some of the proposed methods.

One method involves testing soils for changes due to bacterial action on hydrocarbon gases. Another calls for planting hydrocarbon oxidizers in the soil and testing their growth later.

But certain strains of microorganisms have been found under conditions totally unrelated to oil-source gases—particularly bugs that "eat" methane. So any such grouping, Magnolia says, must be studied carefully to determine whether or not it really points to oil below. And, so far, the researchers have no fully documented case of new production having been found by this method.

Researchers are also hunting for a bug to attack other bacteria that cause corrosion in production and transportation operations. None has been found yet.

The big villain in corrosion are the sulfate-reducing bacteria—various strains that transform sulfates into sulfides. The petroleum industry is plagued with multimillion-dollar damage bills each year, due to bacterial action on casing, tubing, and line pipe. One of the hardest types of sulfate-reducers to battle are the anerobic (absence-of-air) variety which are capable of living in a hydrogen atmosphere.

A number of inhibitors have been tried in combatting bacterial corrosion, but none of them work too well. The obvious answer is a real bacteria killer that will work under the conditions in which the microbes thrive. And some very intense research is being done in this field.

Proposed use of bacteria for secondary-recovery work rests on the theory that certain types could cause chemical and physical changes in the oil reservoir, and thus increase production. This theory was advanced by Dr. Claude F. ZoBell as a result of work in American Petroleum Institute Project 43 just after World War II.

ZoBell suggested microorganisms might "soften" the formations; produce carbon dioxide, methane, and hydrogen gases to build up the reservoir's drive and reduce oil viscosity; manufacture detergents to break oil loose from the formation; and displace the oil by attaching themselves to the surfaces of the reservoir.

Magnolia researchers, after conducting 11 separate experiments involving use of 103 oil-containing sand packs and 6 sandstone samples, using 38 bacterial strains, have found no evidence that oil recovery could be increased by this method.

Lack of pore space for the bacteria to enter and grow, extreme heat in the reservoir, and lack of nutrients for the microbes were some of the difficulties cited by Magnolia.

In refining, research might yet provide the means of making fermentation competitive with chemical processes, according to microbiologists.

Promising results in desulfurizing Arabian crude oil have been reported. Magnolia's work indicates however, that bacteria have an uphill battle attacking sulfur compounds in crude oil, because of the high molecular weights involved.

Only if more economical and effective means are developed, Magnolia concludes, can microbiological desulfurization of crude oil be a potent threat to chemical processes. On the other hand, use of oil in the industrial manufacture of chemicals is a promising area for use of bacterial fermentation.

Despite opposition in Congress, Peron government insists on . . .

Foreign Oil Capital for Argentina

The Argentine government is fighting for congressional approval of its first contract for foreign participation in oil development before the current session of Congress adjourns at the end of September. Last week, in the face of continued attack from Radical Party opponents, secretary of economic affairs Alfredo Gomez Morales slashed away at criticisms of the administration's oil policy.

Morales strongly defended the contract with Standard Oil of California, and emphasized the importance of private risk capital to Argentina's oil development. At the same time, he said another proposal was submitted early this month by Standard Oil Co. (N. J.). Royal Dutch Shell—which has been considering the possibilities for a long time also—"has not presented its offer so far," Morales said. "But when it does, it will also be studied."

The Socal contract, signed by President Juan Peron last April, was the first new exploration grant given by the Argentine government in 20 years. The Argentine Constitution defines petroleum as the "inalienable" property of the state, and the administration has been trying to get congressional approval of the Socal contract as a "contract law" applying solely to this instance, without upsetting the basically nationalized status of oil development (PW—Jul.22'55,p29).

The contract has been tied up in endless committee study, however, and has not yet been submitted to Congress. Legislators now have requested some amendments, which industry minister Orlando Santos will negotiate with Socal representatives in Argentina.

The controversial contract, which has been a prime political target of administration opponents, grants Socal's Argentine subsidiary exploration and development rights for a period of 40 years, extendable a further five years if oil is discovered in commercial quantities. Initial concession area covers 19,000 sq. mi. in Santa Cruz province, to be reduced by degrees after the fourth year to a total of 7,700 sq. mi. in the 10th year, and to 1,900 sq. mi. in the 20th year.

After that further reductions will be made at rates to be determined by the number of wells drilled.

Minimum investments are specified at $13.5-million in the first four years of exploration, and $70-million within 10 years of the contract date if oil is discovered. Profits are to be split 50-50, the government's share to be collected largely through income and excess profits taxes. Socal is specifically exempted from all other taxes, royalties, and rentals, and equipment imports are duty-free. Socal will be free to remit its 50% share of profits.

Until Argentina is self-sufficient in crude oil, terms of the contract require Socal to sell all crude produced to Yacimientos Petroliferos Fiscales (YPF), the government oil entity. Price will be the peso equivalent of current price of East Texas 39-gravity crude, less 5%. After Argentine requirements are met, Socal can either export crude, or refine and market it in Argentina through a new subsidiary to be set up for the purpose.

Current heavy oil imports are a serious drain on Argentina's foreign-exchange reserves. With consumption rising fast, and expected to double present level in the next ten years, Morales said, Argentina alone cannot solve the production problem that makes imports necessary.

Argentina is currently importing about 60% of its oil requirements at an annual cost of about $200-million. Demand is running at 200,000 b/d, of which only 81,000 b/d is produced nationally.

YPF is producing 67,500 b/d of the current output. Jersey Standard and Shell account for the remaining 13,500 b/d from concessions they have held since before 1935. They have been unable to secure new con-

Offshore Drilling Gets Under Way

FRANCE—Parentis 11, Western Europe's first open-water well, has been spudded and was drilling below 3,700 ft. at last report. Located at a depth of 10 ft. to 15 ft. in the Lake of Biscarosse, in the Parentis area of southwestern France, the well is being drilled by Esso-Standard S.A.F., French affiliate of Standard Oil Co. (N. J.). Esso will soon begin Parentis 14, its second lake well, at a location about halfway between Parentis 11 and the east bank of the lake, whose maximum depth is 60 ft. A drilling barge is being assembled for the further lake exploration.

cessions since that date, at which time all new exploration areas were reserved for YPF.

The cost of oil imports accounts for about 20% of the foreign exchange Argentina spends on all imports and has been a substantial deterrent to the country's industrial development.

The only logical solution to the production problem, the economic affairs secretary said, is the government's invitation to private capital to develop oil resources. He added that companies undertaking such a high-risk venture deserve to earn "fair and just profits."

Socal's considerable investment obligations under the contract, Morales pointed out, will be at the company's own risk, with no guarantee of minimum profits or indemnity for unproductive capital. Therefore, he asserted, the risk factor must carry a relatively high profit margin.

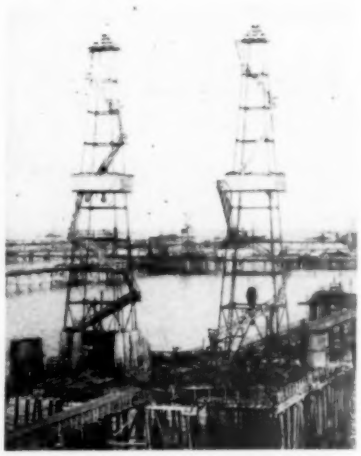
Morales dismissed as absurd the contentions made locally that future Socal output would fill entire local requirements. In the first place, he said, there is no assurance that oil even exists in Santa Cruz. And further, he added, complete self-sufficiency in oil will be a huge and long-range task requiring extensive investment from many sources and many years of development by several large companies.

Jersey Standard's new oil proposal to the Argentine government follows negotiations that have been going on since late 1953, when President Juan Peron announced that private capital would be invited to help develop the country's oil resources. Terms have not been released by Jersey in New York, but Argentine reports say the proposal calls for a $12.6-million investment in a concession of 11,000 sq. mi. in the Neuquen area in western Argentina. The proposed contract would run for 40 years, extendable another 5 years.

Jersey and Royal Dutch Shell have been carrying on integrated operations in Argentina, including production, refining, and marketing, although production has been limited to concessions held prior to 1935. Shell also has been discussing new oil-development possibilities with the government since the late 1953 invitation to private capital, thus far without any firm results.

Last year Floyd Odlum was discussing a 25-year oil development contract for his Atlas Corp., in conjunction with Dresser Industries. Morales said last week that the Atlas proposal was handed back completely revised, but he did not elaborate further.

Russia Builds a City at Sea



ADJACENT DERRICKS at "Oil Rocks" confirm Russian close spacing practices.

U.S.S.R.—A self-contained city rises out of the waters of the Caspian Sea around the Soviet drilling at Neftyanye Kamny field 25 mi. from shore, 60 mi. east of Baku. Discovered in 1949, the "Oil Rocks" field has been intensively developed, and a permanent installation has been built on trestles to carry on production operations. The field's oil derricks and storage facilities, as well as housing and recreational facilities for oil workers and their families, are interconnected by 25 mi. of steel trestle. Movement of trucks, jeeps, and tractors is directed by traffic police. Bachelor workers are quartered in dormitories, married workers and their families in two-story houses. Recreational facilities include clubs and movies. The City on the Sea also includes hotels for transients.

TRUCKS MOVE EQUIPMENT and personnel over 25 mi. of steel and lumber constructed trestles that provide roadways between wells and gathering stations.

TYPICAL GATHERING STATION in "Oil Rocks" field. Two of the three gas-oil separators shown at right appear to be of makeshift construction. *Pictures from Sovfoto*

What's New / ABROAD

Better Climate Ahead?

BRAZIL—U. S. oil men are closely watching the leading candidates in the forthcoming presidential elections. All three favor foreign participation—sooner or later—in Brazil's oil development. Juscelino Kubitchek, leading contender, says he would give Petrobras a year's trial first (PW—Jul. 29'55,p31). Adhemar de Barros openly favors foreign participation. Juarez Tavora talks about "oil for the Brazilians," but local opinion considers this a pre-election propaganda line and believes he also will welcome foreign oil development once elected.

U. S. oil men agree that despite the seeming unanimity, there won't be any early change in the present setup that limits oil exploration to the government monopoly organization. Reason: Whoever the new president may be, he will still have to hurdle a nationalistic Congress. But the oil men are already gearing for a possible change. One company has started shifting its personnel emphasis in Brazil from marketing to production.

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New Drilling Planned

EGYPT—International Egyptian Oil Co. will start a deep test of all zones on an exploratory location about 3 mi. south of its present Belayim field in Sinai peninsula as soon as a new Ideco Super 7-11 drilling rig arrives next week.

Meanwhile, Southern California Petroleum Corp., operator for International Egyptian, reports it has set protective casing on Belayim No. 2 at 8,793 ft. because of the large amount of oil sand exposed and the danger of blowout. The well encountered six productive horizons, the last with 150 ft. of solid oil sand from 8,600-8,750 ft. The company will core ahead below the shoe of the 7-in. casing cemented at 8,793 ft. with the hope of finding the Oligocene-Eocene contact in the next 500 ft. (PW—Jul.22'55,p30).

International Egyptian discovered the Belayim field this year and now has four producing wells besides Belayim No. 2 and No. 6, which it is now drilling. Company officials are optimistic that the Belayim field may be many times larger than Shell's Ras Gharib field, across the Gulf of Suez, where current production is about 25,000 b/d. An extensive survey of the company's offshore areas near the Feiran and Belayim fields has been completed.

•

COLOMBIA—International Petroleum Co. of Colombia (Jersey Standard) has signed a $20-million contract with Bechtel Corp., of New York, for construction of its new refinery at Cartagena. Work will start immediately, with completion scheduled for late 1957. Present Intercol plans call for use of imported crude oil in the projected refinery.

•

WEST GERMANY—Exports of oil products, the industry expects, will hit about 7-million bbl. by the end of this year. In the first six months, exports increased 50% over the first half of last year, to a total of roughly 3-million bbl., not including quantities sold to Allied occupation authorities.

Domestic consumption also shows substantial increases this year, according to oil industry statistics. Gasoline sales increased by 19% to a total of 9.3-million bbl. for the first six months, and diesel fuel sales moved up by 26% to a total of 9.4-million bbl. in the same period.

Refineries in West Germany processed 18% more crude in the first half year than in the same period last year, or a total of about 33.4-million bbl. Domestic crude oil accounted for 31% of the total processed, as compared with 32% last year.

•

VENEZUELA—A 22½% increase in oil production in the first half of 1955 pushed Creole Petroleum Corp.'s earnings to a record high. Creole said last week that net production, plus purchased royalty oil averaged 968,215 b/d for the six-month period, as compared with average of 790,490 b/d in 1954. Creole estimated net earnings for the half at $1.87 per share, compared with $1.52 per share earned last year.

•

SYRIA—Syria's ultimatum to Iraq Petroleum Co. concerning increased pipeline transit fees (PW—Aug.12'55, p34) has been approved by Parliament. A resolution adopted Aug. 9 urged the government to end negotiations with IPC within the month, and stated that Parliament should be allowed "to exercise its powers" to protect the country's rights if the negotiations are not successfully concluded within the specified time.

•

SYRIA—Iraq Petroleum Co. has announced agreement with the government on construction of a new 24-in pipeline between Homs, Syria, and the IPC terminal in Tripoli, Lebanon. Two IPC pipelines with combined capacity of 150,000 b/d originate in Kirkuk, Iraq, pass through Homs, and terminate in Tripoli. The new 74½-mi. line will expand facilities from Homs by 190,000 b/d.

Decision to build the Homs-Tripoli pipeline is not to be confused with proposals still pending on diversion of two other inactive IPC lines that originate in Kirkuk and pass through Jordan to Haifa, Israel. Negotiations have been going on for some time on diverting them by adding a new line branching off at Mafrak, Jordan, crossing Syria, and terminating in Sidon, Lebanon. Syria has withheld approval pending settlement of its transit fee dispute with IPC.

•

FRANCE — Socony-Vacuum Francaise S. A. has requested exclusive exploration permits covering a total of 3,907 sq. mi. in north and central France. The northern block includes 2,113 sq. mi. in the departments of Ardennes, l'Aisne, Seine-et-Marne, and l'Oise. Central-area permits requested cover 1,794 sq. mi. in the departments of Loir et Cher, Cher, Indre et Loire, and Indre.

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CANAL ZONE—Northbound oil shipments from the Pacific accounted for the bulk of the total traffic increase that set a new record for the Panama Canal. In the fiscal year ended June 30, 1955, total traffic exceeded the previous year's record by more than 1½-million tons, the Panama Canal Co. disclosed. Oil shipments northbound increased by about 1,650,000 tons (about 33,000 b/d), while oil shipped from the Atlantic decreased slightly. Most of the jump in Pacific to Atlantic tanker trade was due to diesel and fuel oil shipments from the U. S. West Coast to the West Indies which amounted to 1¼-million tons (about 25,000 b/d). Cargo carried through the Canal in U. S. bottoms increased to about one-third of total traffic.

HOT ASPHALT SHIPS plus ample refining capacity to supply . . .

GROWING SUPERHIGHWAYS, such as the New Jersey Turnpike, mean . . .

Asphalt Sales Will Be Pushed

Oil companies are taking a closer look at the growth potential of their most neglected stepchild—asphalt. Already expansion in demand in the postwar period has been significant. Future prospects look even brighter.

And uniquely with asphalt, refiners find themselves in the enviable position of being prepared to meet all anticipated requirements without the need to expand capacity.

Present asphalt-making capacity, according to a recent survey by the Asphalt Institute, amounts to 35.8-million short tons annually, or more than twice last year's demand. By shifting to lower-gravity crudes, this capacity could be increased to about three times the 1954 consumption.

Asphalt's biggest market potential is the 2.5-million mi. of unpaved roads in the nation, equal to more than two-thirds of the total U. S. mileage of roads and streets. Paving accounts for about 75% of asphalt's total sales, and already four-fifths, or nearly 750,000 mi. of the 900,000-odd mi. of paved roads and streets, are paved with asphalt.

Paradoxically, the congressional defeat of President Eisenhower's proposed $48.5-billion, 13-year highway construction program has not lowered the estimates of the future demand for asphalt.

On the contrary, many in the industry view the defeat of this bill as an indirect blessing to asphalt refiners and marketers. They interpret the failure of this bill to pass as meaning that federal and state road-building agencies will have to stretch their highway construction dollars further—which means more use of asphalt as the paving material instead of costlier concrete.

Some oil company asphalt department officials had been worried that, if the bill had been approved, many states that previously could not afford to build concrete highways would have used the increased funds to switch to this material.

Perhaps the strongest endorsement yet of asphalt-paved highways has been the extensive use of it on toll roads in the postwar period. Asphalt roads in the past had acquired a bad name—many people thought of it as a "second-class" paving material—because of its extensive use on secondary roads. These are frequently "budget-paved" highways, and therefore use a relatively thin topping of asphalt. Concrete would be impossible in such roads since it can't be poured as thin as asphalt and still be serviceable.

The savings in using asphalt on such roads frequently made it possible to use concrete on the major arteries. However, the urgent need to catch up on highway building after the war led to use of asphalt as an economy measure on the broad new superhighways and turnpikes. Asphalt was used in greater thickness, and the results have been pleasing to the oil industry.

Use of asphalt on these major highways resulted in the availability of direct cost comparisons with concrete. On many of the toll roads, bids were submitted on both concrete and asphalt paving, and the differences in costs sold asphalt as the paving material. For the 118-mi. New Jersey Turnpike, the saving with asphalt totaled $5.5-million, or more than $46,000 per mile. A similar per-mile saving was realized on the West Virginia Turnpike; the saving amounted to $20,700 per mile on the Maine Turnpike and $13,200 per mile on Oklahoma's Turner Turnpike.

Another important support for using asphalt paving is the lower maintenance cost—averaging 11% less per mile than concrete, according to a 10-state survey made by the Oklahoma Turnpike Commission. Also, asphalt roads can be patched when necessary, whereas a broken section of concrete paving has to be removed and the entire "block" repaved.

Concrete cannot be used to resurface an existing concrete road without first removing the existing concrete. Asphalt, on the other hand, can be laid on top of either concrete or asphalt. Asphalt salesmen are particularly encouraged to learn that asphalt resurfacing is being done on portions of the all-concrete Pennsylvania Turnpike.

Promoting the use of asphalt in paving has been neglected to a great extent in the industry, and oil companies have been keenly aware of the salesmanship used by the cement industry in national advertising campaigns encouraging wider use of concrete.

Instead of actively pushing asphalt—their own product—many oil companies have actually paved service stations driveways and quite frequently refinery and terminal roads with asphalt's competitor—concrete. The petroleum industry's reluctance to use this petroleum product has made the sales effort even harder.

While the biggest drive is to promote asphalt as a paving material, many new uses of asphalt have been found recently, and still other possibilities are being explored.

The Asphalt Institute, for instance, moved into its new laboratory headquarters the first of this year at College Park, Md., and for the first time has adequate research facilities to study the real potential of this material. The association's budget for re-

search and promotion has been increased.

One of the growing uses of asphalt is in hydraulic structures, such as levee slopes, irrigation ditches, canal linings, and dikes. Use in irrigation ditches is particularly important in the arid western states, where an estimated 34% of water in unlined irrigation ditches is lost by seepage.

Another potential market exists in the use of asphalt emulsions sprayed on the ground to prevent soil erosion This has been tried successfully on highway embankments to hold soil in place until grass could be grown. Increased use of asphalt as roofing and water-proofing material for homes and other structures is being encouraged.

The ready availability of asphalt is an important part of its sales potential. Terminals are located in every state and are being increased. Frequently these terminals are not too far from asphalt refineries. The material is now produced in 72 U. S. refineries, spread out over 27 states. Also, oil companies are expanding their asphalt tanker fleets—the "hot" tankers that are equipped to transport the material in liquid form at temperatures between 300F and 350F.

These vessls can pick up asphalt at coastal refineries and deliver the material hot to points on the seacoast. It means that an asphalt refiner can go into the asphalt business at any area where tankers can dock without the necessity of erecting terminaling facilities.

The existing ample refining capacity, plus widely located terminals and available transport, greatly enhances asphalt's sales potential.

Process Hikes Aromatics Output

A new method for recovering liquid products from coke gases may have some impact on the petroleum industry's expected share of the growing aromatics market.

The new process, evolved by Rust Engineering Co., of Pittsburgh, is in operation now at the Midland (Pa.) plant of Crucible Steel Co. of America. It enables Crucible to produce from coke-oven gas an average 9,000 gal. a day of liquid products, containing benzene, toluene, and xylene. This is about 10% more than Crucible turned out before. Another big advantage: It costs less to produce the greater output.

With the demand for aromatics expected to increase by 150% in the next 20 years (PW—Aug.12'55,p24), the new process could alter the petroleum industry's estimated high rate of increase. One source estimates that petroleum will supply 77.2% of the 1.4-billion gal. demand in 1975; presently it supplies 51.5% of the 555-million gal. demand, with the remainder coming from coal.

Since processing of aromatics from coal is usually a byproduct operation, it has been believed that output from this source isn't likely to increase much, except as the coking of coal increases. And since coke is tied so directly to steel production, where slow, steady growth is the outlook, it has been thought that coke production would increase only slowly.

But the Rust process makes it appear now that oil men have underestimated the possibility of greatly increasing output of aromatics from coke. This means that coal may well grab much more than its predicted 22.8% of the 1975 aromatics market, and all of it at the expense of petroleum processors.

The new recovery process is based on spray absorption, rather than the more conventional absorption by liquid circulation. It has increased production of one unit by 120%.

Rust engineers, using only one of the two existing absorption towers at the Crucible plant, increased operating efficiency to the point where the one tower could handle all of Crucible's daily average of 36-million cu. ft. of coke gas. Over-all production was boosted 10%, despite conversion and use of only one tower instead of two.

Under the new method, the liquid absorption tower has been converted to a spray absorber. A highly effective mist-separation scrubbing section prevents carryover of liquid wash oil in the gas. Desired intensity of contact is obtained by circulating the wash oil at a high velocity by means of pumps.

The one spray tower replaces the two packed towers used in the old system, in which liquid products were absorbed from the coke gases by circulating a petroleum fraction of very low volatility through the tower.

Crucible ran into trouble when the coke ovens turned out more gas than the two towers could handle with economic use of the plant's power system. Production costs rose so high, in fact, that Crucible was faced with the problem of actually losing money on the byproduct operation. But the Rust development has licked the problem. It also has opened the door for similar operations by other coke processors.

What's New
IN REFINING

API Spring Meeting Set

The American Petroleum Institute's Division of Refining has tentatively scheduled 11 technical sessions for the 1956 mid-year meeting, to be held in Montreal May 14-17. This will be the first time the API's Refining Division meeting has ever been taken outside the country. The decision to convene in Canada in the Spring is "in itself signal recognition of the Dominion's growing oil industry," says Sohio's E. B. McConnell, API vice-president for refining.

Two sessions on analytical research, a training session, sessions on air pollution and waste-water disposal, and discussions on corrosion, electrical equipment, and instrumentation will highlight the meeting.

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Republic Oil Refining Co.'s 42,500 b/d plant at Texas City was shut down last week after the breakdown of negotiations for a new contract between the company and Local 4-449, Oil, Chemical & Atomic Workers International Union (CIO).

The company began shutting down all units of the refinery on Aug. 10 after the union gave notice that it was going to carry out its strike threat. About 375 union employees are involved, a Republic official said.

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North Star Oil Co., Ltd., Winnipeg, Alta., will start erection of a 2,500 b/d refinery at Grande Prairie, Alta., next month. The plant will cost $2.5-million and will be erected by Canadian Kellogg, Ltd., contractor. Most of the North Star's Winnipeg refinery will be moved to Grande Prairie. Addition of new units to the old facilities will make it one of the most modern of its kind in western Canada, according to Roy Smith, petroleum consultant to North Star. The firm's marketing headquarters may later be transferred to Grande Prairie.

•

A new $6-million plant for the manufacture of synthetic fluid catalyst for petroleum cracking is under construction at Valleyfield, near Montreal, for Davison Chemical Co., Ltd. The company was formed by the Davison Chemical Co. division of W. R. Grace & Co.

HUGE UNDERGROUND STORAGE CAVERN is one of two nearing completion of Sohio's Lima (Ohio) refinery.

Sohio Digs Deep for Storage

Standard Oil Co. (Ohio) expects to have its first underground storage units, costing $525,000, ready for use about Oct. 1. The caverns will hold about 60,000 bbl. of propane 450 ft. below the surface of the ground. They will be about 160 ft. long, 37 ft. high, and 30 ft. wide, with 13-in. holes extending from the ceiling of each of the caverns to the ground above. Propane will be pumped down the casing of the 13-in. holes; then it will be pumped back up as it is needed through pipes installed within the casing.

Digging of the caverns started in February, 1954. It took a full year to dig a shaft through green block shale, largely because the crew ran into trouble with water-saturated rock at a depth of 178 ft. But when suitable dry rock formation was reached at the 450-ft. level, excavating of the caverns themselves proceeded swiftly.

Original plans called for construction of four caverns, in two of which Sohio had hoped to store ammonia from its new petrochemical plant. But the rock composition was not conducive to holding the ammonia, and the plans were shelved.

DERRICK tops shaft opening.

How Many New Tank Cars?

Are 60,000 tank cars—including 28,500 new ones—needed to haul cargo which would be diverted from tankers in the event of a war? A government advisory subcommittee says yes—unless more pipelines are built.

The Consultants Committee on Railroad Equipment has reported that a stepped-up wartime transportation program and diversion of traffic from coastwise and intercoastal vessels would necessitate a net increase of 22,000 tank cars within three years of mobilization day. The rest of the 60,000 needed could be diverted from present railroad fleets.

The group added, however, that "accelerated pipeline construction adequate to avoid any large scale temporary shift of long-haul petroleum traffic to railroads is being considered. In the event of adoption of this program, the need for 60,000 tank cars . . . would be eliminated."

The subcommittee reports a total of 165,000 tank cars were counted at end of 1954, and that the proposed program would raise this total up to 187,000. It notes that the Office of Defense Mobilization and the Defense Transport Administration have assumed that water traffic would be diverted largely to railroads. The subcommittee adds that 70% of this diversion would consist of petroleum products. ODM and DTA estimate that shrinkage in water traffic would reach 100-billion ton mi. in the first year of mobilization.

This is what the subcommittee recommends:

(1) That 3,000 large-capacity general service tank cars for oil, gasoline, and "like traffic" be built for each of the three mobilization years.

(2) That 13,500 additional tank cars be built for "partial application on the potential diverted coastwise and intercoastal shipment of petroleum products."

(3) That a stockpile program be initiated which would make available 6,000 specialized tank cars for hauling LPG, chemicals, and other liquids.

ODM emphasizes that the findings of the subcommittee will be treated only as recommendations resulting from a year-long study. It is understood that ODM sees little chance of the LPG tank car stockpiling program ever going into effect. As for the remainder of the program, the subcommittee only assessed the possible need for tank cars in the event of mobilization—not how to activate such a project.

During World War II, shipments of oil and oil products from the Southwest to the East Coast ran as high as 1-million b/d. But this dropped heavily when the Big and Little Inch pipelines were completed.

The Petroleum Administration for War reported in July, 1943, that a total of more than 80,000 tank cars were serving the East Coast, out of a total 107,000 in petroleum service throughout the U. S.

Long trains of tank cars moved eastward along the specially designated highball routes, called "symbol" routes. The oil was placed in huge storage "pools."

But when the Big Inch pipeline was completed to the East Coast later that year, and the Little Inch a few months later, their combined capacity of more than 500,000 b/d enabled a sharp cut in tank car shipments.

In the same way, what happens to current pipeline-building plans (PW —Jul.8'55,p54) is the real key to the need for tank cars in any future mobilization.

What's New / IN TRANSPORTATION

Ice May Block Barges

Barge operators on the Illinois waterway may have to do their own ice-breaking this winter. The Coast Guard has notified the Chicago District Waterways Assn. that no funds have been provided to keep the channels clear of ice this winter.

The CG says it will help keep the waterways open as best it can, but that it can give no guarantee. Without ice-breaking service, the waterway might be closed to navigation from two to six weeks, depending on the severity of the winter.

Abraham Feldman, president of Chicago District Waterways Assn., says the group will fight the Coast Guard action. It will also canvass industry immediately to determine the potential damage to the Chicago area economy if the waterways are icebound, then petition the mayor and Congress to increase appropriations to avoid the threatened heavy losses.

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Ashland Oil & Refining Co. has bought out two barge-operating companies to meet increased requirements for inland water transportation. The companies purchased are River Co., Inc., and its wholly owned subsidiary, Jordan River Lines, Inc.

River was one of the barge operators engaged in litigation against the projected conversion of most of the Little Inch pipeline from gas to petroleum products service. It will withdraw from the case, says Paul G. Blazer, Ashland board chairman, because it no longer will be substantially engaged in transportation for hire of clean petroleum products.

A Federal Power Commission examiner has approved an application by Trans-Continental Gas Pipe Line Corp. for a $3.5-million pipeline expansion program. The new facilities would increase natural gas delivery to Sun Oil Co. at Marcus Hook, Pa., by 10-million cu. ft. daily. The project would consist of 27 mi. of loop lines in Louisiana, Georgia, Carolina, Virginia, and Maryland. The examiner's decision is subject to review by the full commission.

FPC also has authorized Cities Service Gas Co. to reclaim an old pipeline and construct new facilities to supply natural gas to four Missouri towns. Cost of the project: $121,500.

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Great Lakes Pipe Line Co. has begun work this week on a third line between Des Moines and Iowa City. The 12-in. line will be 116 mi. long and will parallel the company's present 6-in. and 8-in. lines between these two points.

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Service Pipe Line Co. is completing three remote-control booster pump stations to increase capacity of its crude system between Casper and Ft. Laramie, Wyo. The 1,250 hp. units, to be finished this month, will provide needed capacity boost into the company's 625-mi. pipeline running between Ft. Laramie and Freemen, Mo.

One station is located 30 mi. southeast of Casper, the second 87 mi., and the third 103 mi. A fourth booster station, scheduled to be finished Oct. 1, is under construction near Lost Cabin, Wyo., northwest of Casper.

JOHN H. WHITE, chairman of NOJC, hits suppliers' "unfair competition," as . . .

Jobbers Put Heat on Majors

Big oil companies may have a lot of trouble repairing the crack that oil jobbers put in the industry's public relations effort last week. And the majors may have to fight new "divorcement" and "depletion" battles in Congress as part of the job.

The trouble started last week when the South Carolina Oil Jobbers Assn. again voted down support of the Oil Industry Information Committee's campaign to build public good will (PW—Aug.12'55,p.12). The association did this on the urging of John H. White (picture), South Carolina jobber and chairman of the influential National Oil Jobbers Council (NOJC). More important, White threatened to ask the same action of the full NOJC.

Reason: White and other jobbers charge that major companies are price-cutting to take commercial account gasoline business (truck fleets, car dealers, etc.) away from jobbers in many parts of the country.

The disagreement could be a blow to the oil industry's celebration of Oil Progress Week, Oct. 9-15, since other state jobber groups may join South Carolina in withholding support.

More is at stake than OIIC support. White also warned of possible federal legislation to divorce oil suppliers from retail operations. And he met with NOJC's Economic Concentration Committee in Chicago late last week to consider anew an attack on the oil producer's 27.5% depletion allowance. However, the full NOJC can't act before Oil Progress Week, since it doesn't meet again until Nov. 2, in Chicago.

Major company men call moves to hit at them through OIIC "illogical." OIIC's chairman, W. R. Huber, of Gulf Oil, explains that, as the American Petroleum Institute's public relations agency, OIIC "endeavors to represent the entire industry," and helps jobbers as well as suppliers.

White calls this "a stock answer." Stating that most of the funds for OIIC come from major companies, he added: "Suppose I'm a tenant, and my landlord lets the roof leak over my head. Then he wants to run for mayor. He hires an agency to tell the public what a fine man he is. And the agency asks me to tell people what a wonderful man my landlord is. Am I going to do it?

The long-standing commercial-accounts problem will not be easy to solve. The current scramble for business in a period of good gasoline supply encourages price cutting.

White charges that majors are using commercial accounts as "dumping" places for gasoline surpluses built up by excess refining capacity that was intended as reserve for national defense. He reports "evidence that several companies are basing sales to commercial accounts on low-of-the-Gulf prices, plus cost (tanker transportation and terminal throughput charges)." This leaves no margin in which the jobber can operate, and he loses business it took years to develop.

"Industry statesmanship at the top" is the answer, says White He insists suppliers should simply refuse to sell at prices jobbers can't meet.

Many of the majors try not to undersell their jobbers. But when a competitor starts taking prices down, they have to go along or watch their volume go out the window.

What's New
IN MARKETING

Sohio Drops Brand

Standard Oil Co. of Ohio will market its own brand of products through retail outlets of its subsidiary, Canfield Oil Co. The decision to put the parent company's name on Canfield pumps, 10 years after Sohio bought Canfield, will eliminate duplicate sales, advertising, delivery and service expenses.

About 100 of Canfield's service stations will replace the Canzol and Royal Canzol emblems with Sohio and Boron, the parent company's regular and premium-grade brands. Canfield motor oils and greases, however, are scheduled to stay in the display racks along with Sohio lubes.

A poll of Canfield retailers preceded announcement of the switch, which is expected to take place progressively this month.

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Pentagon Pat on PX 'Gas'

The U. S. Defense Dept. apparently intends to continue gasoline retailing, although it wants to withdraw from at least 14 other business and manufacturing activities.

The Pentagon, pursuant to military appropriation-bill requirements, notified Congress of the Defense Dept.'s plan to pull out of such activities as coffee roasting, dry cleaning, and paint manufacture in the "near future." Defense Secretary Wilson said this list of activities will be expanded.

But all questions about the possibility of abandonment of PX service stations were left hanging. The Pentagon has long felt that on-post gasoline sales—at PX prices—help to keep men in the armed services.

The Market Trend

A Poser: Oil's Handy; Coal's Cheap

The question of oil vs. coal is simmering along the East Coast. Last week, bunker oil prices hopped up 15¢ a bbl. from Maine to South Carolina. The increase came when oil prices already were high in relation to coal. It was the second 15¢ heavy fuel hike this summer (PW—Jul.22'55,p35). It put No. 6 in transport lots up to $2.68 at New York and Philadelphia, $2.67 at Norfolk.

The increase brings up sales problems: How much of a premium over coal will buyers pay for the ease and convenience of oil? How much No. 6 business will go by the boards? Electric utility plants—they bought 38.4-million bbl. of oil in the first half of this year—are likeliest candidates for a switch.

The latest bunker oil increase makes cost figures impressive in favor of coal. A big New York chemical company can buy coal, delivered by ship, at a price equivalent to $1.95 per bbl. of bunker "C" fuel. A large metals company in New Jersey, entirely on coal, pays a price equivalent to $1.96 for No. 6 fuel. For the average middle Atlantic industrial customer, coal is cheaper than oil on a Btu basis by 40¢ to 50¢ a bbl.

Most oil buyers won't make any sudden switches to coal. Coal contracts for next year don't come up for renewal until March, and operators already are talking higher prices. But oil men make one prediction flat out: If the present discrepancy between coal and oil prices is going to be permanent, a big volume of No. 6 sales will be lost.

Oil hasn't priced itself out of the market yet. From the West Coast (where bunker oil traditionally is long) comes an inquiry for a cargo of "C" fuel, FOB the U. S. Gulf. A steel mill learned that it could get an extra cargo of low-sulfur residual only if it was willing to part with a cargo of ordinary fuel. A Gulf Coast refiner anticipates that coking will reduce his heavy oil output to the point where he will have to import fuel just to cover his ships' bunkering.

Distillates:

The East Coast got an expected 0.25¢ increase in No. 2 and diesel fuel prices, beginning on Aug. 11. Most barge buyers were prepared for it, had filled tanks in advance. Tip-off on the East Coast move was the hike in distillate cargo prices at the Gulf (PW—Aug.5'55,p35).

For an off season, No. 2 fuel cargo buying at the Gulf has been active. This week an East Coast major picked up two more cargoes. His total purchases since late July: five cargoes.

Gasoline:

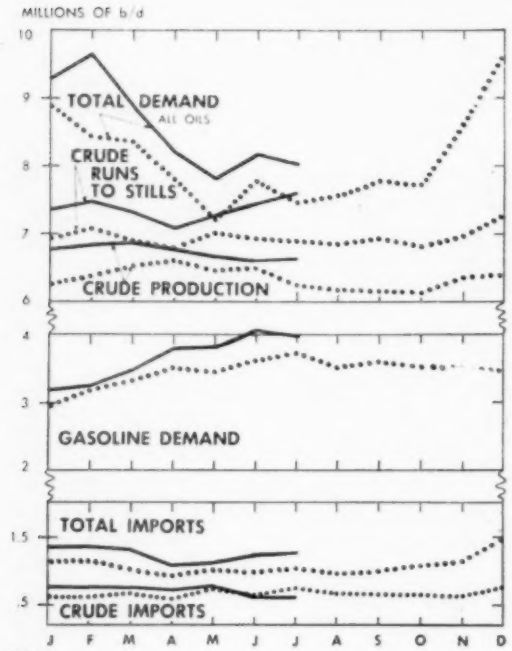
Refiners in the Midwest and at the Gulf say that this season's market is the strongest in three years. How much longer it will stay firm is anybody's guess. Refinery runs still are on the high side. Cargoes bought at the Gulf for 30-day lifting won't hit the East Coast until the end of September.

Crude:

There's talk in the trade of higher prices for low-gravity oils. Refiners say that low-gravity California crudes, in the light of a strong residual market, are slated for price hikes. In the export market, traders are on the lookout for increases in heavy Venezuelan oils.

PETROLEUM WEEK'S

Fingertip Figures



TOTAL DEMAND

Latest 4-week average	8.268
Year ago	7.511

RUNS TO STILLS

Latest week	7.647
Previous week	7.542
Year ago	6.735

CRUDE PRODUCTION

Latest week	6.635
Previous week	6.640
Year ago	5.158

GASOLINE DEMAND

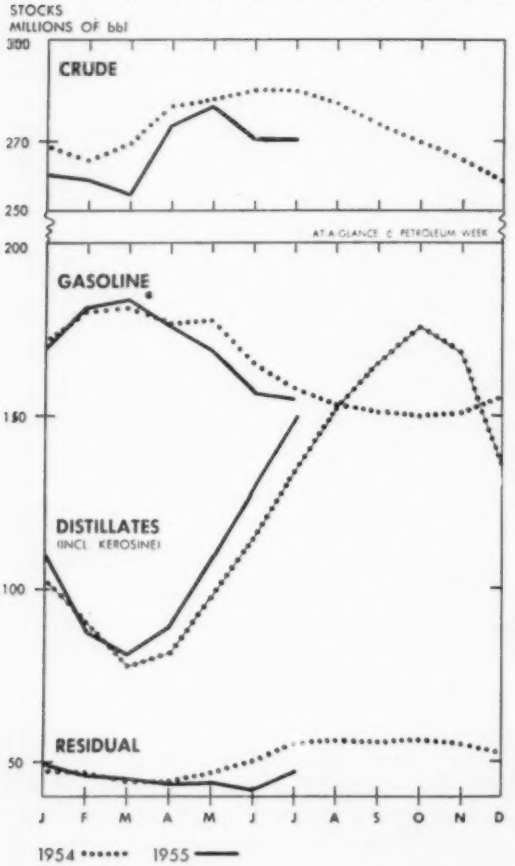
Latest 4-week average	3.993
Year ago	3.658

TOTAL IMPORTS

Latest week	1.102
Previous week	1.013
Year ago	.917

CRUDE IMPORTS

Latest week	.781
Previous week	.681
Year Ago	.771



CRUDE STOCKS

Week ended	
8-6	265.6
Previous week	269.1
Year ago	279.8

GASOLINE

Latest week	155.0
Previous week	156.5
Year ago	156.3

DISTILLATES

Latest week	155.0
Previous week	152.0
Year ago	141.0

ROTARY RIGS

Latest week	2.952
Previous week	2.951
Year ago	2.551

RESIDUAL

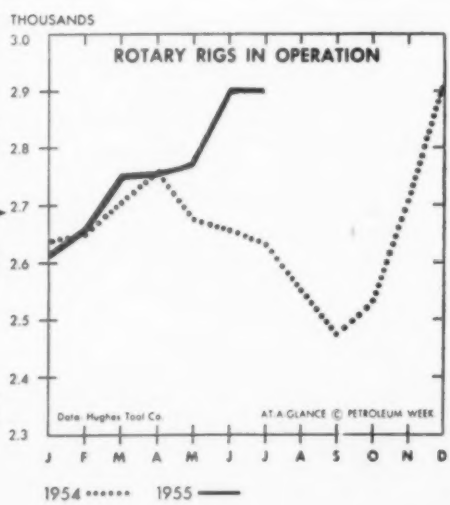
Latest week	45.7
Previous week	45.3
Year ago	55.7

TOTAL DEMAND for all oils moved up sharply in the four weeks ended Aug. 12, recording a gain of 10% over the like part of 1954. Gasoline demand was up 9.1% over a year previous in the latest four-week period, and residual demand showed a gain of 10% Total demand for the one week ended Aug. 12 amounted to an average of 8,562,000 b/d, a gain of 14% over the corresponding week of last year. This is the highest weekly demand since the final week of June.

High refinery runs continue to feature the oil industry's operations. Crude runs to stills in the Aug. 12 week, averaging 7,647,000 b/d, were the second highest on record, exceeded only by a single week last February. The week's runs were 912,000 b/d higher than in the same week of 1954. Despite the high level of refinery operations, improved demand for gasoline resulted in a 1.5-million bbl. decline in gasoline inventories in the Aug. 12 week. But the build-up of distillates inventories gets more threatening every week.

* * * *

Preliminary data indicate a sharp increase in total demand for the full month of August, probably amounting to 8% to 9% over the previous August. If this gain is realized, stocks of all oils during the month will probably show an average increase of no more than 200,000 b/d. This would compare with a daily average increase in total stocks of 215,000 b/d in August, 1954.



The Market Place

AROUND THE WORLD

Current key crude and refined oil prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service, a McGraw-Hill Publication.

All Prices as of August 15

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal., except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- Gasoline, 97 oct prem. 13-13.5
- Gasoline, 90 oct reg. 11-11.5
- Kerosine 8.75-9.75
- Heating oil, No. 2 8.5-9.25
- Gas oil, 48-52 d.i. 8.625-9.125
- Fuel oil, bunker "C" $2.10-2.15

Caribbean, cargoes
- Avgas, Grade 100/130 16.75
- Gasoline, 93 oct research prem. 11.5
- Gasoline, 87 oct research reg. 10.5
- Gasoline, 79 oct research 9.75
- Gasoline, 70-72 oct motor method 9.5
- Kerosine 8.75
- Heating oil, No. 2 8.5
- Gas oil, 48-52 d.i. 8.625
- Fuel oil, bunker "C" $2.10

New York Harbor, barges
- Gasoline, 89 oct reg. 11.75
- Kerosine 10.55
- **Heating oil, No. 2 9.8-10.05**
- **Fuel oil, No. 6 $2.65**

Okla.-Group 3, northern shpt, bulk
- Gasoline, 86 oct reg. 11-11.5
- **Kerosine 9.25-9.5**
- **Heating oil, No. 2 8.125-8.5**
- Fuel oil, No. 6 $1.75-1.90

Chicago, bulk
- Gasoline, 86 oct reg. 12
- Heating oil, No. 2 9.25-10.3
- Fuel oil, No. 6, high sulfur 7.15-7.35

Los Angeles, rack
- Gasoline, 84 oct reg. 11.75-12.1
- Stove dist., PS 100 9.25-10
- Diesel fuel, PS 200 8.75-9.25
- Light fuel, PS 300 $2.05-2.10
- Heavy fuel, PS 400 $1.70-1.85

Natural Gasoline, Grade 26-70
- FOB Group 3 5
- FOB Breckenridge, Tex. 4.5

Penna. Lubes
- Bright stock, 25 p.t. 17.5-18
- **200 vis. neutral, 25 p.t. 18-18.5**

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i. 20-21
- Neutral, solvent, 200-210 vis. 15.75-16.75

Gulf Coast Lubes
- Bright stock, solvent 95 v.i. 20-21
- Neutral, solvent, 200 vis. 15.75-17.5

Eastern Hemisphere

Singapore, cargoes
- Avgas, Grade 100/130 18.125
- Gasoline, 79 oct research 10.25
- Gasoline, 70-72 oct motor method 10
- Kerosine 9.375
- Gas oil, 48 d.i. minimum 9.125
- Fuel oil, light $3.10

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9 grav. $2.82
- North Dakota, 36.0-36.9 grav. 2.82
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 grav. 2.95
  - Gulf Coast, upper & lower, 26.0-26.9 grav. 2.82
  - West Texas sweet, 36.0-36.9 2.82
  - West Texas-New Mexico intermediate, 36.0-36.9 2.75
  - West Texas—New Mexico sour, 32.0-32.9 2.61
  - East Texas, flat price 2.90
  - Mirando, 28.0-28.9 grav. 2.96
- Illinois Basin, flat price 2.90
- Penna. Grade, Bradford dist., flat price 3.60
- California, Signal Hill, 21.0-21.9 grav. 2.30†
- North Louisiana-Arkansas, 36.0-36.9 grav. 2.82
- Wyoming sweet, 36.0-36.9 2.82
- Wyoming sour, 32.0-32.9 2.48

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.) D-2, D-3, L.C. 2.54
- Leduc-Woodbend (Alta.) D-2, D-3 2.60
- Redwater (Alta.) D-3 2.49
- Daily-Mississippian (Man.) 2.34
- Smiley-Viking (Sask.) 2.24

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 48.0-48.9, Tucupido 3.40
- San Joaquin, 41.0-41.9, Puerto la Cruz 3.04
- Oficina, 32.0-32.9, Puerto la Cruz 2.82
- Tia Juana Medium, 26.5-26.9, Amuay 2.30*
- Bachaquero, 16.5-16.9, Amuay, Las Piedras 1.80**
- West Tarra, 37.0-37.9, Cardon 2.99
- Lagunillas Heavy, flat prices: Cardon 1.90
  Amuay, Las Piedras 1.85

Differential per ½ deg. grav.: (*) 2.5¢ bbl. (**) 3.5¢ bbl.
†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabian, 36.0-36.9, Ras Tanura 1.97
- Basrah, 36.0-36.9, Fao 1.92
- Iranian, 34.0-34.9, Bandar Mashur 1.91
- Iranian, 34.0-34.9, Abadan 1.86
- Iraq, 36.0-36.9, Fao 1.92
- Kuwait, 31.0-31.9, Mina-al-Ahmadi 1.72
- Qatar, 39.0-39.9, Umm Said 2.06

Middle East, E. Mediterranean
- Arabian, 36.0-36.9, Sidon 2.39
- Iraq, 36.0-36.9, Tripoli, Banias 2.39

Far East (Cargoes, FOB Lutong, Sarawak)
- Seria Light, 37-38 grav. 2.60

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- **U. S. Gulf-New York, clean (USMC −20%) $2.28**
- **U. S. Gulf-New York, dirty (USMC −25%) $2.14**
- NWI-USNH, dirty (USMC −15%) $2.30
- NWI-UK/Continent, dirty (MOT +2½%) 33/4*
- **Persian Gulf-UK/Cont., dirty (Scale −2½%) 52/11***
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CLASSIFIED

DISPLAYED RATE

The advertising rate is $12.60 per inch for Equipment and Business Opportunity advertising appearing on other than a contract basis. Contract rates quoted on request.

Employment opportunities—$14.80 per inch, subject to Agency Commission.

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$1.50 a line. Minimum 3 lines. To figure advance payment count 5 average words as a line. (See * on Box Numbers.)

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INFORMATION

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REPLIES (Box No.): Address to office nearest you
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Estimator—Engineering graduate with several years experience in estimating costs of oil refineries and chemical plants for contractor in Chicago area. Submit complete resume and photograph indicating education, experience and salary requirements. P-7404, Petroleum Week, 330 West 42nd Street, New York 36, N. Y.

OFFICE AND BULKPLANT MANAGER

Northern New Jersey Oil and Heating—Air-Conditioning Marketing Company. Opportunity and challenge for able young man to become part of ownership and management. Write

P7382 PETROLEUM WEEK
330 W. 42nd St., New York 36, N. Y.

PERSONNEL MANAGERS

LOOKING FOR ENGINEERS . . . TECHNICIANS ?

Write for free copy of

"RESERVOIR OF ENGINEERS AND TECHNICAL MEN"

THE engineers and technicians you want to reach are gathered in convenient, compact groups—as this 12-page booklet points out.

It keys the job titles these men hold to the McGraw-Hill publications they read for on-the-job information. It explains how you can make contact . . . channel, concentrate your employment advertising to just the men with the job qualifications you want.

Write for your free copy to
Classified Advertising Division
McGraw-Hill Publishing Co., Inc.
330 W. 42nd St., N. Y. 36, N. Y.

DEPT/Oil Men at Work

JOHN R. MC KAY has been appointed regional supervisor of operations of the new Canadian region of Plymouth Oil Co., Sinton, Texas. He will be stationed at the company's new Calgary office. He will also be in charge of operations in Montana and the Dakotas. He resigned as production manager of Banff Oil, Ltd., to take the Plymouth post. He is a former division petroleum engineer of British American Oil Co., Ltd., and former senior engineer of Standard Oil Co. of California.

ROY B. KELLY has been elected president of Venezuela Syndicate, Inc., of Houston, a royalty holding company. He succeeds **H. Harper McKee.** The election followed purchase of controlling stock in the company by Kelly and a group of investors including **Cecil V. Hagen** of Houston, **Clint W. Murchison** of Dallas, and G. L. Ohrstrom & Co., of New York City. The firm has substantial holdings in Venezuela, producing royalty in the East Texas field, and other interests in West Texas. Others elected, at a stockholders' meeting in New York City last week, are: **James L. Ballard** of Houston, vice-president, and **Holman Jenkens,** Murchison's attorney, secretary-treasurer.

G. R. CARTER, former division geologist for Buffalo Oil Co., has been promoted to manager of the firm's operations in West Texas. He is a former senior geologist, Midland division, of Superior Oil Co. and a former district geologist for Texas Pacific Coal & Oil Co. **M. B. Taubman,** Buffalo's executive vice-president, has moved from Midland to the firm's new regional office at Fort Worth and will head the company's operations in West Texas and New Mexico.

HARRY ALBAUGH will head the enlarged district office at Abilene of Drilling & Exploration Co. The firm is expanding activity in the eastern platform section of the Permian Basin. Albaugh, son of Ray A. Albaugh, West Texas independent oil operator, has been associated with his father and is also a former district geologist for Elm Oil Co. Drilexco's Midland exploration office is being consolidated with the Abilene organization.

GEORGE C. MC GHEE, explorer and oil producer, has opened an office in the Republic National Bank Building, Dallas. His McGhee Production Co. will handle geophysical evaluation and drilling of prospects. Purchase of producing oil and gas properties will be made in conjunction with Petroleum Reserves, Inc.

J. D. MC LEAN is new chief geologist in the headquarters of Southern Union Gas Co., Dallas. He was senior division geologist, at Midland, for Bay Petroleum Corp. before joining the Southern staff.

JAMES B. GIBBS has been promoted to production superintendent of Lion Oil Co.'s Kansas district, with headquarters at Pratt, Kan. He was district petroleum engineer.

O. P. GILBERT will be area manager and head of exploratory activities at the new Evansville (Ind.) quarters of Gulf Refining Co. The firm's oil activities for virtually all of northeastern U. S. will be concentrated in a newly leased floor of the Wright building at Evansville. The company's Centralia (Ill.) office will be consolidated with the Evansville office. Gilbert will be assisted by I. A. Bacon, production superintendent.

O. H. BERRY and **CHARLES E. PHILLIPS** will open a consulting petroleum engineering office Sept. 1 in Midland. The partnership will specialize in evaluation and management of oil and gas properties. Berry is manager of production and chief engineer for The Vickers Petroleum Co., Inc., Wichita. Phillips is consulting petroleum engineer with Robert W. Harrison & Co., Houston.

J. H. KOEHNCKE will be manager of tank car operations for Sinclair Refining Co. He will supervise accounting, distribution, and maintenance of Sinclair's tank car fleet. He succeeds **W. P. Blanchard,** who retired.

JOHN HORN has been promoted to technical adviser to management of the natural gas department of Phillips Petroleum Co., Bartlesville. He succeeds **Allen B. Hiatt,** who resigned. Horn was Houston representative of the department. Replacing him in Houston is his former assistant, **J. W. Mims.**

FRANK B. FULENWIDER, new assistant sales manager of Tide Water Associated Oil Co.'s central division, Tulsa, will help spearhead the division's expanding marketing program. The expansion will include service station construction and broader services to distributors. He was assistant sales manager in the firm's Los Angeles office.

DR. GEORGE A. AGOSTON, former research director for Kerr-McGee Oil Industries, Oklahoma City, has joined the physical sciences division of

Stanford Research Institute, Menlo Park, California. As a senior physicist, he will aid the physics department's research on combustion and fluid dynamics. He is also a former senior research engineer for California Institute of Technology and a former research associate at Massachusetts Institute of Technology.

R. H. MARTIN has been named central division manager of Rocky Mountain Oil & Gas Assn., Casper, Wyo. He was with James E. Emrick Co., Casper, for 4½ years prior to the appointment. Before that he was with the Casper Morning Star and the Torrington Telegram.

K. D. BOWEN has been appointed vice-president and general manager of the new Texas Butadiene & Chemical Corp., of Houston. The firm will build a multimillion-dollar alkylate-avgas and butadiene plant in the Houston area—the first to produce synthetic rubber from privately-financed facilities (PW—Jul. 22'55,p15. Bowen, a native of Midland, Mich., is former director of manufacturing coordination for Celanese Corp. of America.

RICHARD F. BROWN has been named a vice-president of Spencer Chemical Co., Kansas City. He retains his duties as general works manager. In another major shift in the Spencer organization, **Dr. John R. Brown, Jr.**, general manager of research and development, was given the new title of managing director, and his department was given status as a separate division. The two Browns are not related.

R. C. DUNLAP, JR., of Dallas, vice-president of Geophysical Services, Inc., will take over presidency of the Society of Exploration Geophysicists Oct. 6 at the group's 25th annual meeting, Denver, Colo. He will replace **Paul L. Lyons**, of Sinclair Oil & Gas Co., who announced results of the mail-ballot election. **Dave P. Carlton**, Houston, chief geophysicist of Humble Oil & Refining Co., was elected vice-president. **George A. Grimm**, Midland, district geophysicist for Tide Water Associated Oil Co., is the new secretary-treasurer. **Dr. Norman Ricker**, Tulsa, senior research physicist for The Carter Oil Co., was elected editor of the society for a two-year term.

A. L. DEATON has been named assistant general counsel of The Carter Oil Co., Tulsa, Okla. He succeeds **Walter Davison**, retired. Deaton has been a member of the Carter legal staff since 1944. He is a native of Sapulpa, Okla.

D. W. CONAWAY has been advanced to manager of the gas and gasoline section of British-American Oil Producing Co., Dallas. He has been district engineer at Denver, Colo. He will be replaced in the latter post by **John E. Stein**, former project engineer there.

RUSSELL L. MAYCOCK has been appointed director of Shell Chemical Corp.'s Houston research laboratory. He was assistant manager of the physical chemistry department at Shell Development Co.'s Emeryville (Calif.) Research center. He replaces **J. Anderson**, who was named director of the research laboratory at Shell's Torrance (Calif.) synthetic rubber plant.

ROBERT D. BROWN, head of a Houston investments firm, won presidency of Target Petroleums, Ltd., Ontario, last week, after a proxy contest. **Edward Suttles**, partner in Suttles Industrial Development Co., Houston, was made secretary-treasurer. Principal assets of Target consist of interests in Savanna Creek, Alta., and a 70,000-acre dry-gas field operated by Phillips Petroleum Co. and believed to be a major reserve area.

BEN GUTMAN, of St. Louis, Mo., has been elected board chairman of the newly formed Home-Stake Production Co., Tulsa, a firm organized for development of oil and gas properties in Oklahoma and the Mid-Continent area. It will be operated by directors and officers of Home-Stake Oil & Gas Co. and Home-Stake Royalty Corp. Other officers of the new company are: **O. Strother Simpson**, Tulsa, president; **Robert S. Trippet**, Tulsa, executive vice-president; **R. G. Cunningham**, Miami, Okla., **vice-president, and J. G. Blount**, Tulsa, secretary.

BLAINE M. PECK has been named general marketing manager of Utah Oil Refining Co., affiliate of Standard Oil Co. of Indiana. He has been with Utoco 22 years. He succeeds **P. L. Vander Jagt**, recently appointed a director and vice-president of marketing. **Karl K. Crandall**, manager of Utoco's sales service department, was promoted to the new created post of manager of bulk sales. He will continue to direct the firm's advertising.

ADRIAN OGLE, first executive director of the California Gasoline Retailers Assn., will take office during the group's state convention Oct. 14-16 at Fresno. He will head a campaign to triple membership, to 3,000. He is first vice-president of the National Congress of Petroleum Retailers.

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Walnut 5778

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Edward A. Callahan, Jr.
350 Park Square Bldg.
Hubbard 2-7160

Chicago 11
G. L. Hackley, Jr.
W. F. Holbrook
520 North Michigan Avenue
Mohawk 4-5800

Cleveland 15
J. E. MacArthur
1510 Hanna Bldg.
Superior 1-7000

Houston 25
David G. Sawyer
724 Prudential Bldg.
Jackson 6-1281

Los Angeles 17
Knox Bourne
1111 Wilshire Blvd.
Madison 6-4323

New York 36
Edward A. Callahan, Jr.
Donald R. Thompson
330 West 42 Street
Longacre 4-3000

Philadelphia 3
W. A. Potter
Architects Building
Rittenhouse 6-0670

San Francisco 4
T. Evans Wyckoff
68 Post Street
Douglas 2-4600

Tulsa 19
J. A. Hartley
Room 309, 611 South Boston
Gibson 7-7767

Let's Leave Depletion Out of It

IT'S IRONICAL BUT TRUE that any really serious trouble the Washington politicians dish up for the oil industry—and for producers and refiners, in particular—during the political year of 1956 may be concocted right within the industry's own immediate family circle.

Recent alarmingly threatening talk points up the prospect, at any rate, and suggests the need for taking heed—now, before candidates for office pick up the ball and start running with it.

STIRRING UP THE COOKPOTS are the gasoline retailers and the oil jobbers. Right now, they are talking stronger than ever before about the need for correcting "conditions" in oil marketing that both have been complaining about for a long while, without, they say, getting to first base. It's plain to see, from the timing of what's being said and done, that they mean to use the threat of seeking action by Washington as a lever to force suppliers into acting. But if they do wind up going to Washington, there's no telling what harm might be done the industry.

Prime target of the jobbers, if worst comes to worst, is likely to be oil's 27.5% depletion allowance. Their national council would have voted last spring to seek a reduction in the allowance, but was talked out of it—on the grounds that a cut would do great harm to independent crude producers, instead of hitting just the big integrated companies—which were the real target because, some jobbers charge, they use profits from producing and refining operations to subsidize losses in oil marketing. Since then, a committee has been studying the situation, reports the time is now at hand for "positive action." And its chairman hints strongly that it'll be the depletion allowance on which the council centers its fire.

A publisher-spokesman for the gasoline retailers suggests, on the other hand, that the answer to surplus supplies of gasoline and to the problem of "too many" gasoline outlets, is to have the federal government control refinery yields and the building of service stations. We doubt much will come of this suggestion, however, though it's of the kind of stuff that makes good election-year fodder for office seekers.

A jobber attack on depletion could be a different thing, however. Depletion has been under fire perennially in Washington. But in every battle so far the industry has stood united, and in the end it has always prevailed. The allowance remains unchanged to this day, and rightly so. That's why in 1956, with business in general and businessmen as individuals almost certain to be a subject of political debate and controversy, it could be disastrous if defection appears in the industry ranks.

SURELY THERE MUST BE a better way—one which would settle intra-industry problems without hurting the industry's overall best interests—than for jobbers to use depletion as a club to try to force big companies into changing their practices regarding commercial accounts or some other supplier-jobber problem.

You a target?

Let's face it . . . we're all targets!

If your plant is not ready with a disaster plan, better act now. There's not a single American plant that's out of range of an intercontinental bomber—and fires, floods, tornadoes or explosions can kill you just as dead as an atom bomb.

It costs next to nothing to take a few simple steps which may save hundreds of lives. Here they are. Check them off today.

☐ **Call your local** Civil Defense Director. He'll help you set up a plan for your offices and plant—a plan that's safer, because it's integrated with community Civil Defense action.

☐ **Check contents** and locations of first-aid kits. Be sure they're adequate and up to date. Here, again, your CD Director can help. He'll advise you on supplies needed for injuries due to blast, radiation, etc.

☐ **Encourage personnel** to attend Red Cross First-Aid Training Courses. They may save your life.

☐ **Encourage your staff** and your community to have their homes prepared. Run ads in your plant paper, in local newspapers, over TV and radio, on bulletin boards. Your CD Director can show you ads that you can sponsor locally. Set the standard of preparedness in your plant city. There's no better way of building prestige and good community relations—and no greater way of helping America.

Act now . . . check off these four simple points . . . lives are at stake . . . have you a right to delay?

NOW, FOR DEEP OR HIGH PRESSURE WELLS:

Oil and gas well tubing 50% stronger than the highest API grades!

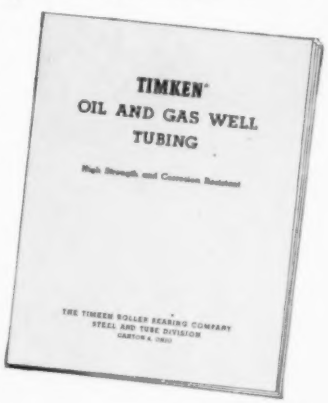
TIMKEN® Seamless Steel Tubing for deep well applications is available with yield strengths up to 125,000 psi, suitable ductility, good corrosion resistance

TIMKEN® seamless steel tubing, capable of withstanding internal pressure up to 15,000 psi, and strong enough for the deepest wells contemplated today, is furnished by the Timken Company in a wide range of sizes and a variety of analyses. Some of the analyses are specially selected for corrosion resistance, all are ductile when properly heat-treated.

While the strongest grade in API Specifications —5A—only calls for 80,000 psi yield strength, Timken steel tubing can be furnished with a yield strength up to 125,000 psi.

The Timken Company has already supplied such tubing for a number of extremely deep or high-pressure wells, with very satisfactory results. Actually, this only scratches the surface of our experience with high-pressure seamless tubing. For over 24 years we have been making it for many other special requirements.

FREE ENGINEERING STUDY. A recent study by the Timken Company metallurgists discusses various alloys for high-strength and corrosion-resistant tubing, and their physical properties. Write for your free copy of "Timken Oil and Gas Well Tubing" to: The Timken Roller Bearing Company, Steel and Tube Division, Canton 6, Ohio. Cable: "TIMROSCO".



YEARS AHEAD—THROUGH EXPERIENCE AND RESEARCH

SPECIALISTS IN FINE ALLOY STEELS, GRAPHITIC TOOL STEELS AND SEAMLESS TUBING